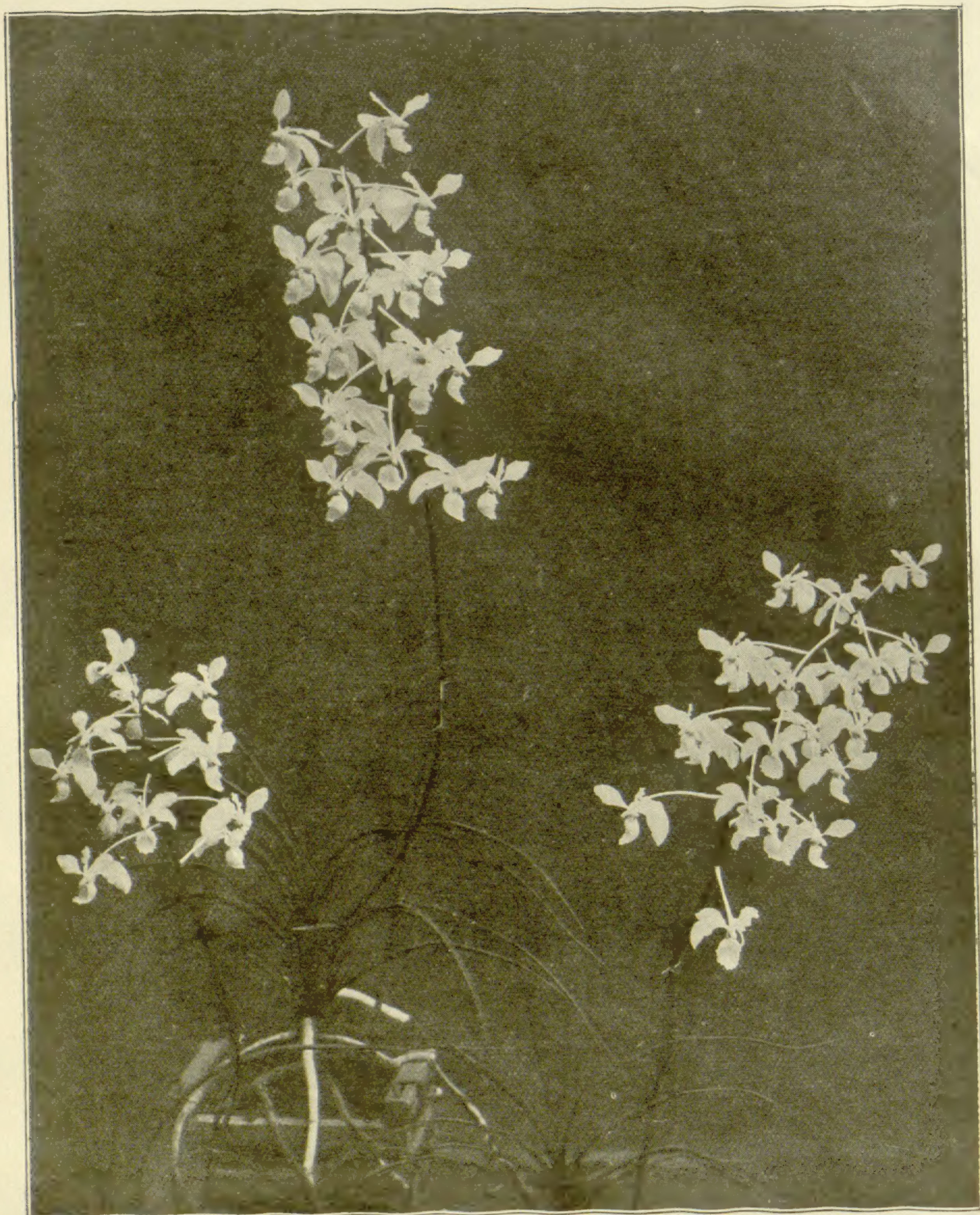


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THE ORCHID REVIEW.



VANDA WATSONI.

(See page 354).

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THE ORCHID REVIEW

An Illustrated Monthly Journal.
DEVOTED TO ORCHIDOLOGY.



VOLUME XVI



1908



Mo. Bot. Garden
1909

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“ By Nature’s swift and secret-working hand,
The garden grows, and fills the liberal air
With lavish fragrance ; while the promised fruit
Lies yet a little embryo, unperceived,
Within its crimson folds.”

THOMSON.

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Subscriptions for 1908 are now due.

VOL. XVI.]

JANUARY, 1908.

[No. 181. ✓

THE ORCHID REVIEW:

An Illustrated Monthly Journal of Orchidology.

Contents.

	PAGE		PAGE
Answers to Correspondents ...	32	Odontoglossum crispum, habitat of ...	30
Calendar of Operations for January ...	27	Orchid Portraits ...	32 ✓
Cypripedes from Bridge Hall, Bury ...	19	Orchid Review ...	8
Dendrobiums... ..	23	Orchids at The Shrubbery, Oxford ...	4
D. Brymerianum (fig. 3) ...	24	Orchids, back bulbs on ...	22
D. Harveyanum (fig. 4) ...	25	Orchids, Brazilian ...	21
D. Hildebrandii (fig. 5) ...	26	Orchids in season ...	31
D. thyrsiflorum (fig. 2) ...	23	Paphiopedilum × Frankeanum ...	29
Events of 1907 ...	1	Porpax, the genus ...	7
Lælia × Adrienne ...	31	Societies ...	10
Lælio-cattleya Isaacsii ...	29	Manchester and North of England	
Miltonia vexillaria Westonbirt var. (fig. 1) ...	9	Orchid ...	15
Notes ...	32	Royal Horticultural ...	10

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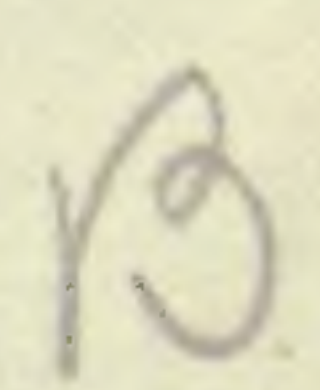


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Volumes I. to XV. can be supplied unbound at 6/-, or bound in cloth, 7/6, postage extra. Cost of postage: book post, 9d. per volume; parcel post within the United Kingdom only, 5d. per single volume (series by weight).

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THE ORCHID REVIEW.

VOL. XVI.]

JANUARY, 1908.

[No. 181.]

EVENTS OF 1907.

THE time has again arrived for us to summarise the events of the past year, which has been one of marked progress, especially in the department presided over by the hybridist. Two very noteworthy events have been the flowering of the giant *Grammatophyllum speciosum* at Kew, and of *Lissochilus giganteus* in the collection of the Hon. Walter Rothschild. We may also allude to the Report of the R.H.S. Conference on Hybridisation and Plant-breeding, which was issued early in the year, and forms an invaluable record of a memorable event.

EXHIBITIONS.

The fortnightly meetings of the R.H.S. have, with scarcely an exception, produced very fine displays of Orchids, and on numerous occasions plants of exceptional interest have appeared. The Society's Gold Medal has been awarded on seven occasions, and the Lindley Medal for exceptional culture on three occasions, while seventeen Cultural Commendations have been awarded, together with about 38 First-class Certificates, and 64 Awards of Merit have been issued, with a few Botanical Certificates to subjects of special interest. The two great shows at the Temple and Holland Park, were marked by exceptionally fine displays of Orchids. The Veitchian Cup, this year offered for the best collection of Orchids staged by an amateur at the Temple Show, was won by Major Holford with a remarkable group. The Manchester and North of England Orchid Society has also had a very successful year, and the awards have again been very numerous. Competitions for special Cups, extending throughout the Society's year, are here attracting much interest.

NOVELTIES.

The novelties of the year have been mostly of hybrid origin, though the Annamese *Bulbophyllum dichromum*, which flowered at Glasnevin, forms a striking exception, its racemes of bright yellow flowers with a deep purple lip being very effective. *Lælio-cattleya Wavrinii*, which flowered in the collection of the Marquis de Wavrin, at Ghent, and was figured at page 249 of our last volume, is a handsome natural hybrid between *Lælia crispa* and *Cattleya Walkeriana*. *Cattleya* × *spectabilis* and *C.* × *Frankeana* have

also been described as natural hybrids of *C. velutina*, the second parents being, respectively, *C. Warneri* and *C. Schilleriana*.

HYBRIDS

of artificial origin have been numerous. *Odontioda Bradshawiæ* is a handsome novelty, raised by Messrs. Charlesworth & Co., from *Cochlioda Noetzliana* and *Odontoglossum crispum*, which received a First-class Certificate from the R. H. S., while *Odontioda Devossiana*, descended from *C. Noetzliana* and *O. Edwardii*, received a similar award when exhibited by M. H. Graire, of Amiens. *Odontonia Elwoodii* was raised by Messrs. Charlesworth from *Odontoglossum cirrhosum* and *Miltonia Roezlii*. *Phaiocalanthe Colmanii* and *Cœlogyne* × *Colmanii* were raised in the collection of Jeremiah Colman, Esq., and a distinct form of the *Cœlogyne* soon afterwards flowered in the collection of Mr. Paul Wolter, in Germany, who also flowered *Lælio-cattleya Wolteriae*. *Brassocattleya Pluto* and *B.-c. Alexanderi* are handsome hybrids from the collection of Major Holford, who also raised *Brassocatlælia Rowena*, *Lælio-cattleya Golden Beauty*, *L.-c. Golden Glory*, *L.-c. Golden Oriole*, and *Sophrocatlælia Phyllis*. *Brassocatlælia Fowleri* is a very handsome hybrid from the collection of J. Gurney Fowler, Esq., *Brassolælia Thwaitesii* was raised in the collection of R. G. Thwaites, Esq., and *Epicattleya balarucensis* in that of M. F. Denis. *Lælio-cattleya Ursula* appeared in the collection of E. F. Clark, Esq., and *L.-c. Jason* in that of G. S. Jessop, Esq. Other interesting things are recorded in the reports of Exhibitions.

ODONTOGLOSSUMS.

Among the *Odontoglossums* progress has been particularly marked. Commencing with *O. × Aliceæ*, raised by Messrs. William Bull & Sons, we find quite a series of novelties. From the collection of De Barri Crawshay, Esq., we have *O. × Amneris*, *O. × Amonasro*, *O. × Ariadne*, *O. × Astarte*, *O. × Astræa*, *O. × Iago*, *O. × Leo*, and *O. × Nemesis*; from M. Ch. Vuylsteke, *O. × Beauté-Celeste*, *O. × cœruleum*, and *O. × gandavense*; from the collection of R. G. Thwaites, Esq., *O. × Ernesti* and *O. × tigrinum*; from Messrs. Sander & Sons, *O. × Prince Edward of York* and *O. × John Clarke*, while *O. × auriferum* and some others were raised by Messrs. Linden. Some blotched seedling forms of *O. crispum* have also been raised in at least three establishments. *Odontoglossums* can now be raised with almost as much ease and certainty as other Orchids, and two important articles on the question have recently appeared in our pages. The habitat of *O. crispum* has also been discussed at some length.

CATTLEYAS AND LÆLIAS.

Some important additions to our knowledge of the geographical distribution of the species of these two popular genera have been recorded in our

pages, the information being intended to supplement that given in the paper on "Natural Hybrids of the *Cattleya* group," published in the Hybridisation Conference report, already alluded to. The appearance of three additional natural hybrids since that paper was written is also noteworthy, and suggests that the question is not yet exhausted.

CERTIFICATED ORCHIDS.

Some indications of the lines of progress are afforded by the plants to which First-class Certificates were given by the R. H. S. First we find eleven *Odontoglossums*, eight of which are hybrids and the remaining three forms of *O. crispum*. There are seven *Cattleyas*, five of which are hybrids, the others being varieties of *C. labiata* and *C. Trianæ*. *Lælio-cattleya* and *Brassocatlælia* had three each, and *Odontioda*, *Miltonia vexillaria* and *Cypripedium* two each, but one of the latter was the foliose *C. tibeticum*—a true *Cypripedium* by the way. The remaining eight were *Arachnanthe Rohaniana*, *Brassocattleya Schrœdero-Digbyana*, *Cymbidium insigne* Glebelands' var., *Lissochilus giganteus*, *Lycaste Skinneri*, South Lodge var., *Sophrocattleya eximia*, Fowler's var., and *Sophrolælia Phroso superba*. The numerous Awards of Merit we have not attempted to analyse.

OUR ILLUSTRATIONS.

A number of the novelties of the year were illustrated in our pages, and it may be interesting to enumerate them:—

- Cœlogyne* × *Colmanii*, p. 73.
- Lælio-cattleya Wavrinii*, p. 249.
- L.-c. Wolteri* (with its parents), p. 145.
- Odontioda Bradshawiæ*, p. 81.
- Odontoglossum* × *Aliceæ*, p. 41.
- O.* × *armainvillierense Robsonæ*, p. 241.
- O.* × *Beauté-Celeste*, p. 48.
- O.* × *cœruleum*, p. 209.
- O.* × *crispum Triomphe de Moortebeek*, p. 57.
- O.* × *eximium King of England*, p. 209.
- O.* × *gandavense*, p. 209.
- Phaiocalanthe Colmanii*, p. 89.

LOSSES DURING THE YEAR.

We have to mourn the loss by death of several well-known Orchidists, including Sir Frederick Wigan, Bart., Joseph Broome, R. I. Measures, Leon Duval, James Herbert Veitch, and Dr. M. T. Masters, F.R.S., whose work and influence will long be remembered.

And now we may glance for a moment at the possibilities of the coming year. The great International Quinquennial Show at Ghent is again nearly due, and as it will also celebrate the Society's Centenary a special effort is

to be made, and a large number of Orchidists will doubtless be present. Our own exhibitions will remain much as usual, and hybridists may have some surprises in store. There are also signs of awakening interest in some of the remarkable species of Orchids which have been too much neglected of late. The future is full of promise, and we hope and believe that our correspondents will have more interesting matters to report than even last year. Such help is greatly appreciated, and give increased interest to our pages and satisfaction to our readers, to all of whom we wish A HAPPY NEW YEAR AND INCREASED PROSPERITY TO THEIR COLLECTIONS.

ORCHIDS AT THE SHRUBBERY, OXFORD.

My visit to the collection of F. M. Ogilvie, Esq., at The Shrubbery, Oxford, took place during the latter half of November, the *Cypripedium insigne* being then at their best. These with the other things in flower would have made an excellent group in Vincent Square, but the danger of taking exotic plants a long way at this time of year will be readily understood. It will be remembered that an excellent group, which was awarded a Gold Medal, was staged from this collection at a R.H.S. meeting in December, 1905.

This collection has been in charge of Mr. William Balmforth for a number of years, and the condition of the plants speaks highly for the treatment which they have received. Mr. Balmforth has been carrying out experiments with different composts, which I shall comment upon presently.

The principal house here is span-roofed, with side and centre staging, and containing three divisions, cool, intermediate, and warm.

The first division is devoted chiefly to *Odontoglossum crispum*, but *Masdevallias*, *Lycastes*, including several plants of *L. Skinneri alba*, *Dendrobium Falconeri*, &c., find room. The *Odontoglossums* were throwing up exceedingly strong spikes for the time of year, and among those in flower was an interesting variety with peloriate markings on the petals. The very fine blotched *crispum*, "F. M. Ogilvie," which has the colour laid on very thickly, and looks as if varnished, is being propagated. *Odontoglossum crispum* has been making Orchid history for a number of years, and if I, as a modern Orchidist, were asked if I had found anything of extraordinary interest in the Shrubbery collection, I should point to the number of plants of pure white (true albino) varieties of *Odontoglossum crispum*. The blotched and spotted varieties of this popular species which have appeared since its introduction have been propagated with the zeal that their high value rendered desirable, while the albinos, appearing much more rarely, and at later dates, are among the rarest of Orchids. While thousands of plants have had to be flowered to find one of these coloured varieties, at least ten, if not twenty, times the number have had to be sifted over to discover a pure white and yellow variety. Numbers appear with white sepals and petals,

but with colour on the lip and column. The pure albino crispum has all the segments pure white, with yellow disc and colourless crest. The removing of the colour from the crest seems nature's greatest effort in perfecting the albino crispum. There are now eighteen or twenty plants of albino crispum varieties in the collection, which include xanthotes "White Lady," x. "Snow Queen," x. Charlesworthii, x. White's var., virginale "Madonna," and v. "Puritan."

It seems that the name "xanthotes" may be applied to any albino which has yellow spots (no matter how few) on any of the segments, as distinct from the yellow disc, but I am not quite sure whether all those that I have classed under this name may be so called. O. x. Charlesworthii is undoubtedly the finest of this section, as the yellow or golden spots are spread over the whole of the segments. O. luteopurpureum Vuylstekeanum, of which there are several plants, is thriving immensely, some of the leaves measuring 2½ across. I might say in passing that there is no moisture-holding second stage in this house, there being sheets of iron close down on the pipes to spread the heat.

In the Intermediate house a corner has been found for a nice little lot of *Odontoglossum* seedlings, among which are some home-raised crispums, the cross being a flushed variety crossed with c. F. M. Ogilvie. A plant of great interest, which should flower this season, is *Cochlioda Noetzeliana* × *Odontoglossum Pescatorei*. This department is really devoted to the cooler growing *Cypripediums*, particularly *C. insigne*, in great variety. The yellow varieties were collected together, and of *Sanderæ* alone 140 to 150 blooms were open. Other varieties included *Dorothy*, *Ernestii*, *Luciani*, *Laura Kimball*, and a dozen or two other named varieties, the whole making an exceedingly fine show. A fine piece of *C. × Arthurianum* had 16 blooms expanded, and many of the other plants were fine specimens. The plants had the foliage wide and stiff, and bore the well ripened look of good culture. A lot of *C. Fairrieanum* was also in flower, besides varieties of *Leeanum*, including *Clinkaberryanum*, *Lavertonianum*, and other hybrids much too numerous to mention. In this house were also a fine lot of *Miltonia vexillaria*, containing some such choice varieties as *Kaiserin Augusta Victoria*, *chelseensis*, and *virginale*, a well-flowered plant or two of the distinct variety *Leopoldi* being in bloom.

The third division is devoted to *Cattleyas*, &c. Examples of most of the white species were noted; many *Lælio-cattleyas*, including *luminosa* and a few others were in bloom, while two interesting *Lælia prestans* were *Cypheri*, a flushed white flower with dark lip, and *Beatrice Ashworth*, which is nearly white.

We now come to a department containing a good selection of *Lælia anceps* and *L. autumnalis*, and then follow several small pits containing the

warmer growing kinds of Orchids. In one *Phalænopsis Schilleriana* and *amabilis Rimestadiana* were doing very well, and amongst a lot of choice *Cypripediums* in flower were a number of $\times$ *Maudiae*, one in particular, named *Shrubbery* var., being very fine. *C. \times* *Lawrebel Shrubbery* var. is an intensely dark and striking variety. In the next pit were a thriving and choice lot of *Cypripedium* seedlings. A few crosses noted were *niveum \times* *Lawrenceanum Hyeantum*, *callosum Sanderæ \times* *Winnifred Hollington*, *Clio \times* *niveum*, *nitens G. S. Ball \times* *niveum*, &c. Here were also a number of small plants of *C. bellatulum album*, which is rather a difficult subject to manage. The next house contained a good number of *Cypripediums* in flower, among them being a particularly rich *C. \times* *triumphans*, and a fine *Charlesworthii*.

The last house is a three-quarter span, in two divisions, in the first of which is a good collection of *Cymbidiums*, including two fine specimens of *C. Devonianum* and a unique specimen of *C. tigrinum*. A finely-flowered batch of *Cypripedium Charlesworthii* were passing over. In the other division were a batch of *Cypripedium bellatulum*, *C. concolor*, and *C. Godefroyæ leucochilum*, carrying a number of pods, while a plant of *Arachnanthe Cathcartii* was developing a couple of spikes. A great many things of interest were in this house, but my notes are already lengthy.

After a walk through these houses the impression left on my mind was that the plants were being well and sturdily grown, and that the modest, painstaking, and clever grower, Mr. William Balmforth, was on the track towards yet doing greater things.

OSMUNDA AND POLYPODIUM FIBRE.—Mr. Balmforth has been carrying on experiments with the use of the above fibres as the basis of his potting material, and the collection is being gradually worked into these as the plants are repotted. A good many growers have unhappy recollections of a sudden plunge into leaf soil, and are not so keen on making another experiment with an untried compost, but the dangers which leaves presented, and which caused irretrievable loss in many collections, do not occur with these fibres. Both *Osmunda* and *Polypodium* fibres have been used for years in the cultivation of Orchids, the former in the United States and the latter throughout the Continent. English growers have little chance of judging American culture, but I understand that *Cattleyas* do remarkably well there, and of course we are all more or less acquainted with Continental growing. The latter can best be described as good, bad, and indifferent, the very best being certainly not better than the best of our English growers. The dangers of leaf soil were always apparent from the first, but even with the knowledge that only careful watering would avoid disaster that event occurred. The plants made roots rapidly, and the growth was correspondingly strong, but the difficulty was in keeping the roots. Roots made during growth were lost during the winter, or from an overdose of water

when growing. Orchids would not keep their roots when potted in it, and this is just what they do when potted in a mixture of these fibres. Mr. Balmforth has plants potted in *Osmunda* only and in *Polypodium* only, and in a mixture of the two. The conclusions which he has so far arrived at point to a mixture of half and half as being best suited for *Cattleyas*, while *Odontoglossums*, which like a closer material, should have two parts of *Polypodium* to one of *Osmunda*. To these mixtures, of course, a sprinkling of moss is added. One has here a compost that is durable and porous, and to judge from the growth which the plants are making in it it contains all the plant food that epiphytal Orchids require. But its strong point is that it keeps the roots, overwatering being nearly impossible. These are materials that I should strongly advise everybody to try—as I myself am going to do—and I think we shall see a change for the better in *Cattleya* growing. There are no flowering greenhouse plants in any way comparable to a well grown *Cattleya*, and there is no gainsaying the fact that generally speaking *Cattleyas* and their allies have been hitherto but indifferently grown in this country. Is a judicious mixture of *Osmunda* and *Polypodium* fibres going to do the trick?

THE GENUS PORPAX.

A REMARKABLE little Orchid has been cultivated at Kew for a long time, and has been figured in the *Botanical Magazine* (t. 7329), under the name of *Eria Meirax*. Recently it has appeared at the Royal Botanic Garden, Glasnevin, a plant obtained from Messrs. Sander & Sons proving identical. Unfortunately two plants have been confounded under the name, and it may be interesting to put the matter right. The cultivated plant is a native of Sikkim, and was discovered by Mr. H. J. Elwes, who sent it to Kew, where it flowered in November, 1880. It was then thought to be identical with the Burmese *Cryptochilus Meirax* (Par. and Rchb. f. in *Trans. Linn. Soc.* xxx. p. 148), which was transferred to *Eria*, under the name of *E. Meirax* (N. E. Br. in *Gard. Chron.*, 1880, ii. p. 603). It was afterwards described by Reichenbach under the name of *Eria Elwesii* (*Gard. Chron.*, 1883, i. p. 402), when it flowered in the collection of Sir Charles Strickland, Bart., Hildenley, Malton, the author remarking that it was a tiny little dwarf and a great curiosity. The bulbs may be compared to miniature onions, under half an inch across, bearing early in the year a pair of small spreading elliptical leaves, which perish in the autumn, and are succeeded by a small reddish brown tubular flower, on a very short oblique pedicel. The plant belongs to Lindley's genus *Porpax*, and has been described and figured under the name of *Porpax Meirax* (King and Pantl. in *Ann. Roy. Bot. Gard. Calc.* viii. p. 114, t. 158), but unfortunately two distinct species are included. The name *PORPAX MEIRAX* must therefore be restricted to be

Burmese plant above mentioned, which is still only known from the original specimens collected by Parish, and a drawing. The Sikkim plant must take the name of *PORPAX ELWESII*.

The original species of the genus is *PORPAX RETICULATA*, a native of South India, which flowered in the collection of Messrs. Loddiges, at Hackney, in 1845 (*Bot. Reg.* 1845, Misc. p. 62). It was afterwards described and figured by Wight, under the name of *Aggeianthus marchantioides* (*Wight Ic.* t. 1737), the specific name being suggested by the habit, while the generic name commemorates the resemblance of the perianth to a vase. It also has the names of *Cryptochilus reticulatus* and *Eria reticulata*.

Four other species are known from dried specimens, as follows:—

P. FIBULIFORMIS (King and Pantl. in *Ann. Roy. Bot. Gard. Calc.* viii. p. 114. t. 157) is a second Sikkim species, found in tropical valleys at the base of the hills, flowering in October.

P. JERDONIANA is a South Indian species, based on *Lichenora Jerdoniana* (*Wight Ic.* t. 1738), the generic name being given in allusion to the flattened pseudobulbs adhering like lichens to the branch on which they grow. It has also the names of *Eria Lichenora*, *E. Jerdoniana* and *Cryptochilus Wightii*.

P. PARISHII (*Eria Parishii*, Lindl. and Rehb. f. in *Trans. Linn. Soc.* xxx. p. 147) was discovered by the Rev. C. S. Parish, in Moulmein, in 1856. Its history is thus recorded on his excellent little drawing:—"This was the first Orchid I ever gathered! When searching for mosses I found this (to me then) singular plant, leafless and flowerless, and knew not that it was an Orchid. The naming of it by the great Lindley incited me to pay attention to the Order!" And to what excellent purpose is well known!

P. USTULATA (*Eria ustulata*, Par. and Rehb. f. in *Trans. Linn. Soc.* xxx. p. 147) was also discovered by Parish in Moulmein, some two years later, making a third Burmese species.

P. ELWESII is the only one known to be in cultivation at the present time, and succeeds in a small pan or a piece of bark, suspended near the glass in a warm house. All the species are much alike in habit, and are so small that the whole of them might be accommodated in a pan a few inches across.

R. A. ROLFE.

THE ORCHID REVIEW.

May I take the opportunity of expressing my pleasure and interest in your monthly issue, as there is always something highly interesting to be found, especially in records of habitats, cultural notes, amateurs notes, &c. Trusting you may have a happy and prosperous New Year with an increased circulation for the ORCHID REVIEW.

ARTHUR E. BAMFORD.

Prestwich, near Manchester.

MILTONIA VEXILLARIA, WESTONBIRT VAR.

The annexed illustration shows the beautiful *Miltonia vexillaria* Westonbirt var., from the collection of Major G. L. Holford, Westonbirt, Tetbury, which received a First-class Certificate from the R.H.S. at the last Temple Show, and is reproduced from a photograph kindly forwarded to us.



Fig. 1. *MILTONIA VEXILLARIA, WESTONBIRT VAR.*

It was greatly admired, on account of the intense vinous-purple, butterfly-like blotch on the base of the lip, which is so well represented in the figure. The photograph represents the plant as exhibited, but is, of course, greatly reduced in size. It is a superb variety, and most comparable with the one known as *M. v. memoria* G. D. Owen.

SOCIETIES.

ROYAL HORTICULTURAL.

A MEETING was held at the Royal Horticultural Hall, Vincent Square, Westminster, on November 26th last, when there was a very fine display of autumn-flowering Orchids, and the awards consisted of eight Medals, one First-class Certificate, five Awards of Merit, and one Botanical Certificate.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), staged a choice little group, which received a Silver Flora Medal. Among the more noteworthy plants were the very beautiful *Cypripedium* × *Thalia* Mrs. Francis Wellesley, *C.* × *T. giganteum*, *C.* × *Gaston Bultel*, *C.* × *Arthurianum*, and other good things.

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. Ballantine), received a First-class Certificate for *Odontoglossum* × *John Clarke*, a noble hybrid of unrecorded parentage, but apparently a secondary hybrid from *O.* × *Rolfeæ*. It bore a very fine spike of eighteen flowers (a few still unexpanded), of very fine shape, over four inches across, and very heavily blotched with reddish-purple on a light ground.

N. C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. Chapman), staged a choice little group containing a fine specimen of *Cypripedium insigne* Sanderæ, a smaller one of the Oakwood seedling derived from it, *C.* × *Actæus aureum*, and the two following, each of which gained an Award of Merit. *C.* × *niveo-callosum* Cookson's var. is a pretty waxy white flower, of good shape, tinged and dotted with light purple. *C.* × *Sanacderæ superbum* is a beautiful yellow form, rather darker than *C. insigne* Sanderæ, and with more white on the dorsal sepal.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), received an Award of Merit for *Cypripedium* × *Ernest Read*, a very fine hybrid of unrecorded parentage, and the ground colour white, slightly tinged with rose, and somewhat veined with green.

Major G. L. Holford, C.V.O., C.I.E., Westonbirt (gr. Mr. Alexander), received an Award of Merit for *Lælio-cattleya* Gertrude (*L. anceps* × *C. Dowiana aurea*), a handsome thing, having blush-rose sepals and petals, and a broad crimson lip with some yellow lines at the base. He also sent the brilliant *Lælio-cattleya* Barbarossa (*L.-c. callistoglossa* × *C. Trianæ*), and *Cypripedium* × *Cynthia*, having a large white dorsal sepal blotched with rose, and the petals and lip yellow tinged with brown.

W. M. Appleton, Esq., Weston-super-Mare, received a Silver Banksian Medal for a pretty little group, including some good forms of *Dendrobium Phalænopsis*, *D. superbiens*, *Lælio-cattleya* Decia, *L.-c. Clive*, *Cypripedium Mastersianum* × *insigne*, with some pretty crosses of *C. tonsum*, *C. exul*, and others.

Sir Trevor Lawrence, Bart., Burford (gr. Mr. White), received a Botanical Certificate for *Cirrhopetalum Makoyanum*, a graceful little plant bearing umbels of pale yellowish flowers. He also sent the pretty *Cypripedium* × *Arnoldiæ inversum*.

H. J. Bromilow, Esq., Rann Lea, Rainhill, Lanc. (gr. Mr. Morgan), sent *Cypripedium* × *fulshawense* and *C.* × *Marjorie*.

J. H. Craven, Esq., The Beeches, Keighley, Yorks, sent *Cypripedium* × *Daltonianum*.

H. S. Goodson, Esq., West Hill, Putney (gr. Mr. Day), sent *Cypripedium* × *Lily Blanche* (*Charlesworthii* × *Niobe*).

H. Little, Esq., Baronshalt, Twickenham (gr. Mr. Howard), sent *Lælio-cattleya elegans*, Baronshalt var., a fine form, with a very broad purple front lobe to the lip.

J. Wilson Potter, Esq., Croydon (gr. Mr. Young), sent a good form of *Lælio-cattleya Baroness Schröder*.

E. Roberts, Esq., Park Lodge, Eltham, sent *Cypripedium* × *Hitchinsiae princeps*.

H. Spicer, Esq., Aberdeen Park, Highbury (gr. Mr. Lovegrove), showed a group of *Cypripedium Spicerianum*.

Messrs. James Cypher & Sons, Cheltenham, staged a very fine group, to which a Silver-gilt Flora Medal was given. It contained about thirty-five forms of *Cypripedium insigne*, including Harefield Hall var., W. P. Bound, some good yellow forms, and var. Monkshood, with a cowl-like arrangement of the dorsal sepal, a fine series of *C.* × *Leeanum* forms, with numerous other hybrids, a good example of *Zygopetalum rostratum*, &c.

Messrs. Charlesworth & Co., Heaton, Bradford, received a Silver Flora Medal for a brilliant group, the centre consisting of a number of good *Lælio-cattleya Cappei*, a fine *Cattleya Dowiana Rosita*, *C. D. marmorata*, and several hybrids, also *Lycaste Tunstillii*, the pretty little *Phalænopsis Lindenii* (whose history was given at page 296 of our last volume), *Odontoglossum* × *ardentissimum xanthotes*, showing the peculiar character of *O. crispum xanthotes*, which was one of the parents, and other good things. An Award of Merit was given to the rare *Angræcum Buyssoni*, an ally of *A. Ellisii*.

Messrs. Hugh Low & Co., Enfield, received a Silver Banksian Medal for a very interesting group, including the rare *Odontoglossum Rossii immaculatum*, a well-bloomed *Dendrobium aureum*, *Oncidium Lanceanum*, *Cattleya* × *Portia*, *Cymbidium Tracyanum*, *C.* × *Winnianum*, *Cypripedium* × *Actæus*, *C.* × *Ville de Paris*, *C.* × *Tityus*, *C.* × *Milo Westonbirt* var., *C.* × *Euryades splendens*, &c.

M. Mertens, Ghent, received a Silver Banksian Medal for a pretty little group, including *Miltonia* × *Bleuana*, *M. vexillaria augusta*, *Odonto-*

glossum $\times$ Vuylstekei, O. $\times$ percultum, O. $\times$ Wilckeanum, O. $\times$ altum, and others.

Mr. H. A. Tracey, Amyand Park Road, Twickenham, received a Silver Banksian Medal for an interesting little group, containing *Cypripedium insigne* Sanderæ, C. i. Harefield Hall var., and other good *Cypripedes*, &c.

Messrs. James Veitch & Sons, Chelsea, also received a Silver Banksian Medal for a pretty little group, including the handsome *Lælio-cattleya* Dominiana, L.-c. Illione, *Brassolælia* Digbyano-purpurata, *Cypripedium* $\times$ vexillarium, and others.

Messrs. Heath & Sons, Cheltenham, sent some good forms of *Oncidium varicosum*, *Cattleya labiata*, *Cypripedium* $\times$ Daphne, some good C. $\times$ Leea-num, C. $\times$ Blanche Moore, and others.

Messrs. Sander & Sons, St. Albans, also sent a nice little group, containing the distinct *Cypripedium* Charlesworthii albens, C. $\times$ Niobe, Sander's var., a finely coloured form, C. $\times$ Shakespeare ($\times$ Euryale $\times$ Rothschildianum), C. $\times$ Rufus (insigne $\times$ Milo), C. $\times$ Maudiaë, C. $\times$ San-Actæus, and the handsome C. $\times$ beechense superbum.

The report of the Scientific Committee on this date contains the following references to Orchids:—

HYBRID ORCHIDS.—Mr. Chapman showed the result of a cross between *Cypripedium insigne* Sanderæ and C. callosum Sanderæ having coloured flowers. Over one hundred plants of this cross had flowered, and each of them had borne coloured flowers, although the parents were albinos. The cross had been effected both ways with the same result. The two albinos breed true from seed. The flower of the particular specimen exhibited was coloured much in the same way as the type forms of the species, and bore great resemblance to C. $\times$ Leoniaë (C. insigne $\times$ callosum). He also showed a plant with a coloured flower, the result of crossing the albino forms, C. callosum Sanderæ and C. bellatulum album; about 25 plants of this cross had flowered, and all had borne coloured flowers. A third plant bore a great resemblance to C. insigne Sanderæ, and had been raised by crossing that form with C. $\times$ Lecanum giganteum (= C. insigne $\times$ Spicerianum); of the offspring of this cross some reverted to the insigne type, but one was much lighter, and was crossed again with C. insigne Sanderæ, giving C. $\times$ San-Actæus. This was again crossed with C. insigne Sanderæ, and the plant under notice was the result. The continued crosses had almost brought back the original C. insigne Sanderæ. This form had in its composition, said Mr. Chapman, $\frac{14}{16}$ C. insigne Sanderæ, $\frac{1}{16}$ normal C. insigne, and $\frac{1}{16}$ C. Spicerianum.

ORCHIDS AND FUNGI.—Mr. Gurney Wilson referred to the theory brought forward by Professor Noel Bernard concerning symbiosis between

Orchids and certain fungi (see *Genetic Conf. Rep.*, p. 392). He, working in connection with Dr. Fulton, had not been able to verify the observations made. He had recently placed a large number of imported *Odontoglossum crispum* in contact with some oak leaves that had been thoroughly dried for some months; a fungus had certainly developed upon them, but it had turned out to be the common mushroom, and the mycelium had undoubtedly been on the oak leaves.

MALFORMED ORCHID.—Mr. Odell showed a specimen of the Orchid *Selenipedium* × *calurum*, in which the lateral petals were completely suppressed, while the dorsal sepal was much reduced and malformed. A similar condition is frequently seen in *S.* × *Sedeni*.

At the meeting held on December 10th there was again a fine display, and the awards consisted of one gold and five other medals, one First-class Certificate, five Awards of Merit, and one Botanical Certificate.

G. F. Moore, Esq., Chardwar, Bourton-on-the-Water, Gloucestershire (gr. Mr. Page), staged a magnificent group of about five hundred well-grown Orchids, to which the Society's Gold Medal was awarded. The majority were *Cypripediums*, but the group was broken up at intervals by plants of *Dendrobium Phalænopsis*, *Epidendrum* × *O'Brienianum*, and *Oncidium varicosum*, with palms and Crotons, and carpeted with moss, so that the pots were not visible. There were about 150 varieties of *Cypripedium insigne*, with the best yellow forms in the centre. *C.* i. Harefield Hall var. was a magnificent specimen bearing a dozen flowers and eight seed capsules. There were also many fine forms of *C.* × *Leeanum* and *C.* × *Actæus*, *C.* × *Maudiaë*, *C.* × *triumphans*, *C. concolor*, the handsome *C.* × *Blanche Moore*, *C.* × *memoria-Moensii*, and others much too numerous to mention.

F. D. Godman, Esq., South Lodge, Horsham (gr. Mr. Moody), staged a very fine group, which gained a Silver Flora Medal. A good plant of *Angræcum sesquipedale* occupied the centre, surrounded by *Calanthe* × *Veitchii*, *C. vestita* and others, with some good *Lælia anceps*, *Vanda cœrulea*, the pretty little *Oncidium cheirophorum* and *O. ornithorhynchum*, well grown *Cypripediums*, &c.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), received a First-class Certificate for *Soprocattleya eximia* Fowler's var. (*S. grandiflora* × *C. Bowringiana*), a compact little plant, bearing a scape of two brilliant mauve-crimson flowers, with the disc of the lip yellow, veined with red.

Major G. L. Holford, C.V.O., C.I.E., Westonbirt (gr. Mr. Alexander), sent *Cypripedium* × *Earl of Tankerville* (*exul* × *nitens*), and the following three other Orchids, each of which gained an Award of Merit. *Lælio-*

cattleya Berthe Fournier var. *tigrina* is a handsome form raised in the collection, having the sepals and petals bronzy yellow flushed with rose, and a rich crimson lip lined with yellow at the base. *Brassocattleya* Siren (*B. Digbyana* × *C. Skinneri*) is a very pretty hybrid, most like the former in habit, with the flowers bright rose and of good shape, and the lip fringed, and with some white at the base. *Cypripedium* × Beryl (× Mrs. Mostyn × *Beekmanii*) is a handsome thing most approaching the latter, and having an emerald green dorsal sepal, heavily blotched with blackish purple and margined with white, while the broad petals and lip are yellowish, tinged and marbled with red-brown.

D. O. Drewett, Esq., Riding Mill-on-Tyne (gr. Mr. Renwick), sent *Cypripedium* × *Actæus superbum*, *C. × A. Purity*, *C. insigne* Monarch, *C. i.* Monkholme, and some good seedling forms raised in the collection. One of these, called *C. i. Gwynedd* (*i. Wallacei* × *i. var.*), and having the dorsal sepal very prettily spotted with rose, received an Award of Merit.

Sir Jeremiah Colman, Bart., Gatton Park, Reigate (gr. Mr. Bound), showed *Phaio-calanthe* Colmaniana rosea, *Cirrhopetalum refractum* with three spikes, and the rare *C. retusiusculum*, the latter receiving a Botanical Certificate.

H. J. Bromilow, Esq., Rann Lea, Rainhill, Lanc. (gr. Mr. Morgan), sent *Cypripedium* Fairrieum Rann Lea var., with a very large dorsal sepal, *C. × fulshawense*, *C. × Actæus*, *C. × Olive*, and *C. × Gaston Bultel* var. King Edward.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. Day), sent four hybrid *Cypripediums*.

F. M. Ogilvie, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), sent a good *Cypripedium* × *Clio*, with another hybrid *Cypripede*.

H. W. Perry, Esq., Hillthorp, Upper Norwood (gr. Mr. Buckingham), sent a nice little group, including some good *Lælia anceps*, *Oncidium tigrinum*, and *Lycaste Skinneri*, with some good varieties of *Cypripedium insigne* and *C. × LEEANUM*.

E. Roberts, Esq., Park Lodge, Eltham (gr. Mr. Carr), sent *Cypripedium* × *Charlesianum superbum* and *C. × Lorna* (*Leeanum Clinkaberryanum* × *villosum*).

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent the pretty *Lælio-cattleya* × Minnie (*L.-c. exoniensis* × *C. Dowiana aurea*), *Cypripedium* × *Thalia giganteum*, and a remarkably fine form of *C. insigne*, closely resembling the Harefield Hall var., but from a different importation.

Messrs. James Cypher & Sons, Cheltenham, received a Silver Flora Medal for a fine group, including some good forms of *Odontoglossum crispum*, *Calanthe* × *Veitchii* and others, *Lælia anceps* *Schrœderæ* and *Amesiana*, *Dendrobium Phalænopsis* and its variety *Statterianum*, *Oncidium*

ornithorhynchum, some good Masdevallias, *Cypripedium* × *Maudiae*, *C.* × *Euryades*, *C.* × *Leeanum*, a very fine series of *C. insigne* varieties, &c.

Messrs. Armstrong & Brown, Tunbridge Wells, received a Silver Banksian Medal for a fine series of *Cypripediums*, including *C.* × *Armstrongiae* (*C.* × *nitens* G. S. Ball's var. × *Charlesworthii*), which was shown with its two parents. It is a handsome thing, having a large white dorsal sepal suffused with pale rose, and shaded with bronze at the base and the petals and lip yellowish, suffused with brown.

Messrs. Charlesworth & Co., Heaton, Bradford, received a Silver Banksian Medal for a very interesting group of rare species, including the curious green *Zygopetalum Murrayanum*, the fine yellow *Oncidium bicallosum*, *Cœlogyne sulphurea*, some fine *Trichopilia suavis*, *Gomeza planifolia*, *Ionopsis paniculata*, *Platyclinis Cobbiana*, *Bulbophyllums*, *Lycastes*, &c., with *Cynorchis* × *kewensis*, and other hybrids.

Messrs. Hugh Low & Co., Enfield, also received a Silver Banksian Medal for a good group, containing the handsome *Odontoglossum crispum Lindeni*, *O. c. Cooksoni*, and others, *Cymbidium Tracyanum*, *Lælio-cattleya luminosa*, *Dendrobium Goldiei*, *Spathoglottis Lobbii*, *Oncidium ornithorhynchum album*, *Gongora quinquenervis*, *Cypripedium niveum*, *C.* × *Mrs. Tautz*, *C. insigne bisepalum*, and other good things.

Messrs. Sander & Sons, St. Albans, received an Award of Merit for *Cypripedium Fairrieanum Black Prince*, a fine form, having unusually dark and broad markings to the dorsal sepal.

Messrs. Edgar & Co., South Woodford, sent a series of *Cypripedium insigne* varieties, and a few hybrids.

Messrs. Heath & Sons, Cheltenham, sent a number of good *Cypripediums*.

M. Mertens, Mont St. Amand, Ghent, showed some good hybrid *Odontoglossums*.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

At the meeting held on November 28th the following members of the Committee were present: Messrs. E. Ashworth (Chairman), Ward, Warburton, Ashton, Chapman, R. Ashworth, Shill, Sander, Cypher, H. H. Smith, Ball, and Parker. The hall was more than comfortably filled with exhibits, and over 60 plants were submitted for adjudication.

J. Leemann, Esq., Heaton Mersey (gr. Mr. Smith), put up a fine group of *Cypripediums* of excellent quality, including *insigne* Harefield Hall var., and *C.* × *triumphans*, with a nice *Odontoglossum* × *Lambeauianum* (Silver Medal).

Messrs. Sander & Sons, St. Albans, received Awards of Merit for *Cypripedium* × *Niobe*, Sander's var., and *C.* × *Rufus*, both very fine. *C.* ×

Milo, *C. insigne* McNabianum, and others made up a nice group (Bronze Medal).

Messrs. Keeling & Sons, Westgate Hill, Bradford, showed the curious *Bulbophyllum barbigerum*, along with many other interesting things.

H. J. Bromilow, Esq., Rainhill, Liverpool (gr. Mr. Morgan), received the Society's Silver Medal for a good group. *Cypripedium* × *Gaston Bultel* var. *King Edward*, a very fine flower of good colour, was awarded a First-class Certificate, and an Award of Merit went to *C. × Leander superbum*. Other fine things included *C. × Marjorie*, *C. bellatulum album*, *C. × Priam*, a fine *C. callosum*, and a well grown plant of *C. insigne* *Sanderæ*.

Messrs. Hugh Low & Co., Enfield, staged a very pale form of *Odontoglossum Rossii immaculatum* (Award of Merit), *Cypripedium insigne* *New Hall Hey* var., *C. × Minos* Thompson's var., and others (Bronze Medal).

Mr. W. Shackleton, Great Horton, Bradford, received a Bronze Medal for a nice little group, which included *C. insigne* *Wellsianum*, *C. Lawrenceanum* *Hyeaenum*, *C. insigne* *Chantini*, &c.

A. Warburton, Esq., Vine House, Haslingden (gr. Mr. Dalgleish), gained a Silver Medal for a group which contained many good things, the chief of which were *Cypripedium × Nandii* (First-class Certificate), *C. × Milo magnificum* (Award of Merit), *C. × Mrs. Tautz* (Award of Merit), *C. insigne* *Skinner's* var., and *Odontoglossum × Wilckeanum* Warburton's var. Many other *Cypripediums* and *Odontoglossums*, including a good *O. × amabile*, made a very pretty exhibit.

Messrs. Cypher & Sons, Cheltenham, staged a fine group, chiefly *Cypripediums*. I noted a good hybrid between *C. Charlesworthii* and *C. × Leeaenum giganteum*, other fine things being *C. insigne* *Sanderæ*, *C. i. W. P. Bound*, *C. i. Luciani*, *C. × Minos Youngii*, *C. × Nogi*, &c., &c. (Silver Medal).

J. McCartney, Esq., Hey House, Bolton (gr. Mr. Holmes), gained an Award of Merit for *Cypripedium × Leeaenum* Hey House variety. Other choice things included *C. × Mrs. Canham*, *C. × Chas. Richman*, &c. (Bronze Medal).

Norman C. Cookson, Esq., Wylam-on-Tyne (gr. Mr. Chapman), showed the beautiful hybrid *Cypripedium × Sanacderæ*, much after the style of *C. insigne* *Sanderæ* but finer in all its parts (First-class Certificate), also the fine *C. insigne* *Sanderæ*, Oakwood raised (First-class Certificate), and *C. × niveo-callosum*, along with *C. × Actæus aureum*, which gained an Award of Merit.

Messrs. Heath & Son, Cheltenham, staged a nice group of good quality, including *C. insigne* *Blanche Moore*, *C. i. Commander-in-Chief*, *C. × Armstrongianum*, &c., &c. (Vote of Thanks).

Messrs. Moore & Co., Rawdon, Leeds, showed a nice group of twenty

plants, including *Cypripedium* × *Baron Schröder*, *C.* × *Boadicea magnificum*, *C. insigne* Wigan's var., *C. i. Laura Kimball*, &c.

Mr. W. Bolton, Warrington (gr. Mr. Cain), gained an Award of Merit for *Cymbidium* × *Holfordianum*. I also noticed a good dark *Cypripedium* *Fairrieanum*, a very pale *Odontoglossum* × *Rolfeæ*, and *Cattleya* × *Portia* (Bronze Medal).

E. Rogerson, Esq., Didsbury (gr. Mr. Price), showed *Cypripedium* × *Actæus* var. *Simonii*, a bright clean flower with distinct markings (Award of Merit).

Messrs. Charlesworth & Co., Bradford, staged a most interesting exhibit. A First-class Certificate confirmed was given to the beautiful and rare *Cattleya Dowiana Rosita*, having the fawn coloured sepals and petals richly streaked and blotched with crimson. *C.* × *Millie* received an Award of Merit. The group also included *Lycaste* × *Tunstillii*, *Liparis grossa*, *Oncidium incurvum album*, and many others of good quality (Silver Medal).

G. S. Ball, Esq., Burton, Westmorland (gr. Mr. Herdman), received a Silver Medal for a good group, and an Award of Merit for the following: *Cypripedium* × *Leeanum* var. *Underfell*, *C. insigne* *Chantini Lindeni* Ball's var., *C. i. maculatum nigrum*, and *C. i. Aberdeen*. A very fine *C. i. var. Eric*, *C.* × *Maudiaæ*, &c., completed a nice group.

J. H. Craven, Esq., Keighley (gr. Mr. Corney), staged an interesting group, which contained a fine *Cypripedium* × *Thalia*, × *C. insigne* *Aberdeen*, *C.* × *Germaine Opoix*, and *C.* × *Evansianum* (Silver Medal).

Mr. J. Robson, Altrincham, gained a Bronze Medal for a few *Cypripediums* of good quality, including a fine pot of *C.* × *Arthurianum*, *C.* × *Leeanum* *Clinkaberryanum*, and other varieties of *Leeanum* and *insigne*.

Mr. D. McLeod, Chorlton-cum-Hardy, showed a small but interesting group which contained many fine but unnamed varieties of *C. insigne*, also a fine *C.* × *Actæus* and *C.* × *Niobe* (Bronze Medal).

S. Gratrix, Esq., Whalley Range (gr. Mr. Shill), showed a fine *Cypripedium* *insigne sylhetense nigrum*, and was given an Award of Merit for *C.* × *Mary Barff* and *C. insigne nitens* Cobb's var.

J. H. Pease, Esq., Moreton Grange, showed several good *Cypripediums*, including *C. insigne* *Cobbianum*, *C.* × *Jeanette*, and a fine *C. Charlesworthii*.

R. Farrer, Esq., Ingleborough, was given an Award of Merit for a fine variety of *Cypripedium* *Fairrieanum*.

Ziba A. Ward, Esq., Northenden (gr. Mr. Weatherby), showed a nice variety of *Cypripedium* *insigne* called *cringlewoodense*.

At the Meeting held on December 19th, the show was by far the best held by the Society under ordinary circumstances, and over one hundred plants were placed before the Committee.

The members present were, Messrs. E. Ashworth (Chairman), Parker, Warburton, Ward, H. H. Smith, Sander, Keeling, Walmsley, Shill, Cypher, Ashton, R. Ashworth, and P. Smith.

Messrs. Keeling and Sons, Westgate Hill, staged a specially fine group of *Cypripediums*. The well-named *C. insigne compactum* was given an A.M., and the same award to *C. villosum grande*. Other things of merit were *C. i. McNabianum*, *C. i. Luciani*, *C. × Leea* Purity, *C. × L. Clinkaberryanum*, &c. (Bronze Medal).

Ed. Rogerson, Esq., Oak Dene, Didsbury (gr. Mr. Price), showed a small group of choice quality. An A.M. was given to *Lælio-cattleya* Hon. Mrs. Astor, Oakdene var. (*L. xanthina* × *C. Gaskelliana*), bearing a spike of six flowers, and to *Cypripedium* × Wm. Hughes. He also showed the rare *C. × Para* (*bellatulum* × *Charlesworthii*), *C. × Queen of Italy*, &c.

H. J. Bromilow, Esq., Rainhill, Liverpool (gr. Mr. Morgan), staged a fine group of excellent quality, several plants being well flowered. *Cypripedium* × *Thalia*, Mrs. Francis Wellesley and *C. × T. giganteum* were both awarded a F.C.C., while *C. × Actæus* var. Olive and *C. × A.* var. Cicely each gained an A.M., as also did *C. insigne Hyea*, *C. × Mons. de Curte Rann Lea* var., *C. × Archimedes Rann Lea* var., *C. × Rita* and *C. × Evelyn*. Other good things were *C. insigne Dormanianum*, *C. i. D. S. Brown*, *C. × Madeline*, &c., &c. (Silver-gilt Medal).

Messrs. Cypher and Sons, Cheltenham, showed several plants of good quality, the best of which were *C. insigne Kathleen Corser*, *C. i. Luciani*, *C. i. Harefield Hall* var., *C. × Facinator*, &c., &c.

Ziba A. Ward, Esq., Cringlewood, Northenden (gr. Mr. Weatherley), staged a beautiful group of mixed plants, gaining a Silver Medal, and an A.M. for *Odontoglossum* × *Queen of Spain*, *O. crispum* Rose Queen and *O. × Jaspar*. Several fine well-flowered plants of *O. crispum* and *Halli*, with *Cypripedium insigne Sanderæ*, and a good *O. × ardentissimum*, &c., &c., made up the group.

J. H. Craven, Esq., J.P., The Beeches, Keighley (gr. Mr. Corney), gained a F.C.C. for *Cypripedium* × *Archimedes* var. *Cravenianum*, and the following plants each gained an A.M.—*C. × Evelyn Ames*, Craven's var., *C. insigne Heathii* and *C. × Cravenianum*, the last being of very good shape. Many other fine things were included in the group, which gained a Silver Medal.

Messrs. Young, St. Albans, showed *Cypripedium* × *Troilus giganteum*, *C. × Prosperodelicata*, and several others.

Mr. Wm. Bolton, Warrington (gr. Mr. Cain), showed an excellent group of *Cypripedium insigne Sanderæ* with about 100 flowers. The plants were very well grown (Silver Medal).

Messrs. Hugh Low & Co., Enfield, staged a good group of *Cypripediums*,

including *C. × Prospero majus*, *C. × Maudiae*, *C. × Clinkaberryanum*, *Dendrobium Goldiei*, &c.

Messrs. Sander & Sons, St. Albans, staged a group in which I noted *Lælio-cattleya Haroldiana* and several fine varieties of *Cypripedium insigne*.

Mr. D. McLeod, Chorlton-cum-Hardy, showed a variety of *Cypripedium Helen II.*, a good *C. Facinator* and *C. villosum auriferum*.

S. Gratrix, Esq., Whalley Range (gr. Mr. Shill), showed *Cypripedium × fulshawense* in good form, and gained an A.M. for *C. × Annie Carter*.

Chas. Parker, Esq., Ashton-on-Ribble, Preston, gained an A.M. for *Cypripedium × fernbankense*.

Mr. W. Shackleton, Gt. Horton, Bradford, showed a nice mixed group, in which were *Cymbidium elegans*, *Odontoglossum crispum*, Mount Blanc (A.M.), and *Cypripediums* and *Cattleyas*.

A. Warburton, Esq., Vine House, Haslingden (gr. Mr. Dalgleish), received a Silver-gilt Medal for a very fine group of miscellaneous plants. *Lælia anceps* var. *Amesiana* gained an A.M., as did also *Cypripedium × Hitchensiae* var. *Baroness*, *C. × Actæus Warburton's* var., *C. × Bertie*, *C. Fairricanum* "Pigmy," very dark, *C. insigne* Standard, *C. i. album Warburton's* var., *C. × Marjorie Warburton's* var. and *C. Harold*. The group included many other fine things, which had previous awards confirmed.

Messrs. Heath & Son, Cheltenham, showed *Cypripedium insigne* *Kathleen Corser*, *C. i. Agatha*, *C. i. Blanche Moore*, and *C. i. sylhetense*.

J. Leemann, Esq., Heaton Mersey (gr. Mr. Smith), was awarded a Silver Medal for a good group of mixed plants, the best of which were: *Odontoglossum crispum* *Mabel Whateley*, *O. c. Queen of Spain*, *O. × ardentissimum dulce*, *O. × Vuylstekei*, *Cypripedium × aureum Hero*, &c., &c. *C. i. Heaton* var. gained an A.M.

Mr. J. Robson, Altrincham, gained a F.C.C. for *Odontoglossum crispum* *Mrs. A. Warburton*. He also showed *Cypripedium × Hitchensiae* var. *magnificum* and *Odontoglossum × Francisii*.

CYPRIPEDES FROM BRIDGE HALL, BURY.

For the last three weeks my *Cypripedes* have been a great show, as there have been about 1,174 in bloom at the same time, and a magnificent exhibition they made to my friends and the Orchid lovers of this district who came to see them.

As the time had arrived for me to relieve the plants of their blooms, I have ventured to send you a collection of the best forms in my collection, as I have had the pleasure of doing on several occasions in past years. You will note that the insignes are the most numerous, their hybrids follow next, and then you will find a number of hybrids raised from other parents and all very choice and beautiful.

Among the collection you will find several of my own seedlings, to which I wish to draw your attention, and would point out that one of them ($\times$ nitens Wrigleyanum) is I consider the finest *Cypripedium* in my collection. The others vary in quality, but some of them will improve when they bloom for the second time.

Although we have had a very sunless season in this part of the world, both myself and gardener hold the opinion that our blooms are finer this season than they have ever been before.

Bridge Hall, Bury.

O. O. WRIGLEY.

A magnificent series! There are forty spotted forms of *insigne*, ranging from the Harefield Hall variety downwards, many of them superbly blotched, besides fifteen yellow forms, of which *Sanderæ* is still the best, followed closely by *Laura Kimball*, while *Sanderiana*, if rather smaller, is equally good in colour. Of the spotted yellows the original *Ernesti* is closely followed by the one called *Dorothy*, which is rather less spotted, while that called *Chantini Lindeni* is rather larger. The others are pretty similar in colour, but not equal in size and shape. There are seventeen forms of $\times$ *Lecanum*, led by *giganteum* and *Clinkaberryanum* in point of size, and nobilior for the copious large spots, somewhat confluent into lines. Of three forms of $\times$ *nitens* the variety *Wrigleyanum* comes first, the broad spreading petals and large copiously blotched dorsal sepal being very handsome. Very beautiful are $\times$ *Actæus* and var. *langleyense*, combining the shape and some light purple dotting of $\times$ *Lecanum* with some of the yellow colour of *insigne Sanderæ*. Two fine forms of $\times$ *Charlesianum* approach the $\times$ *Sallieri* type, and *Ville de Paris* is very similar. There are also good forms of $\times$ *Lathamianum* and $\times$ *aureum*, with $\times$ *Arthurianum* and var. *pulchellum*. Of three forms of $\times$ *Hera* (*Euryades*) the variety *incomparibilis* is remarkable for the large amount of rich purple on the dorsal sepal, and the clear white apex and margin, while the petals and lip are very richly coloured. We should place it first of the whole series for richness of colouring. Among well-known and very handsome forms $\times$ *Swinburnei magnificum*, $\times$ *Pageanum* and $\times$ *Maudiaë* stand out very conspicuously. There are two very handsome ciliolare hybrids of which the second parent is not recorded, and another equally fine seedling, apparently from *Curtisii*. Other seedlings are $\times$ *Ashburtonæ* $\times$ *Lawrenceanum atrorubens*, most like the latter in shape and colour, and very promising, while one called $\times$ *exultans*, from $\times$ *Swanianum* $\times$ *exul*, though approaching the latter, has a purple suffusion in the sepals and petals, with many small brown dots. The spotted *insignes* form a very remarkable series, and it is incredible the amount of variation they present. The scapes are stout and strong, and the flowers very finely developed. Mr. Wrigley and his able gardener, Mr. Rogers, must be congratulated on such excellent culture.—ED.

HABITATS OF BRAZILIAN ORCHIDS.

I THINK the following extract from a letter received from a friend residing in Brazil may be of interest to some of the readers of the *Orchid Review*. He is very keen, and has a fine collection of Orchids in his garden, most of them having been collected by himself. I hope we may get an article from his own pen, which I am sure would be of much interest:—

“The knowledge of the *Cattleya* and *Lælia* districts seems to be very limited among your Orchid growers, or else it is withheld by the importers for the sake of their pockets. I saw an article in a recent number of the *Orchid Review* (vol. xv. p. 279) in regard to the habitat of *Cattleya velutina*, or rather mentioning it in an article on *Cattleya* hybrids. Mr. Rolfe says that the *Flora Brasiliensis* only records *C. velutina* as coming from the Province of Rio de Janeiro. This *Cattleya* has a range from 12° to 25° south latitude, and from about 41° to 50° west longitude. As far as my personal knowledge goes it occurs at 700 to 800 metres above sea level. I never heard of it being found lower down.

“We are about 800 metres here, and some of the finest specimens that I have ever seen came from about fifty miles south of here. They grow in this State (Sao Paulo) in the same districts as *C. bicolor*, *C. Loddigesii*, *C. Harrisonæ* and *Lælia crispa*. I have two natural hybrids found by myself, one between *C. velutina* and *C. Harrisonæ*, and the other between *C. velutina* and *C. bicolor*. I have also a cross between *C. bicolor* and *C. Loddigesii*—that is a beauty.

“The collectors here strip everything when they find a lot worth having. I was foolish enough to tell one of them where he could find *C. velutina*, and he took out ten thousand plants, and did not leave one for seed. I will never do it again. *C. velutina* grows in this State—in small clumps of bush scattered over the plains, rarely more than six or eight feet from the ground, where there is plenty of light but little direct sunlight. They flower here in February and March, at the same time as *C. bicolor* and *Harrisonæ*, and in the same district, and are very fragrant. The *C. velutina* and *Harrisonæ* cross that I have is also fragrant, but the other is not.”

My friend sent me by post some *Cattleya* and *Lælia* seed of extra good varieties, which was sown on the 1st of October and germinated at once, and is now, (1st December) in some cases, the size of No. 4 shot. I think that this shows how much better seed is that has matured under natural conditions, than in our houses.

It would be of much interest if some one who has a collection of Orchids would try hybridising in the country where the plants grow, and having selected a place under natural conditions, i.e. the forest, sow the seed there, and keep a record of the time in which the plants come to perfection.

All lovers of Orchids will doubtless regret the wanton destruction of plants by collectors, and the crass ignorance of such men not to leave a few small plants to re-stock the ground, as in the case mentioned above. We suffer in the long run, but I suppose pocket will always govern collectors.

Pippbrook, Dorking.

H. GURNEY AGGS.

It is interesting to find native *Cattleya* and *Lælia* seeds germinating at home in this way, and it may yet be a matter of economic importance. There are certain Orchids which cannot be got home alive, but the above record raises the question whether the seeds might not be successfully transmitted.—ED.]

BACK BULBS ON ORCHIDS.

THE question of cutting away the back bulbs of Orchids is one that concerns every grower, it matters not if he only grows a few, or has thousands; what is right for one in each order is right for quantities. I am not writing this for old hands, but rather for new beginners, as it is very puzzling for those with little experience to know where to draw the line, and what really are useless back bulbs so far as the lead or leads to the plant is concerned. The word useless can only be used in respect to the leads, as most of the back bulbs that require cutting away for the benefit of the leads, have enough life in them to produce a new plant when severed from the original.

This picture should always be before one when considering the size of any plant—how many leads has it? The size would then be the number of leads multiplied by four, for in most cases three pseudo-bulbs behind each lead is ample. Sometimes one sees plants with perhaps fifteen or twenty bulbs and only two leads, and then there is a great waste of energy going on, which sooner or later, probably the former, will so rob the leads that the plant becomes an absolute wreck, only fit for the fire hole. If those old bulbs, which have not been self-supporting for a long time, had been removed, and the sap which they had taken had gone to the lead, the general upkeep of the plant would have been maintained. I consider that anything which is not helpful to the plant in making progress wants removing, for by so doing the plants can be kept indefinitely young, and that should be the aim of all growers to keep the stock young and vigorous.

The question when to prune often arises, and I think that the best method is to go over the plants and sever the rhizomes with a sharp knife, and although any invariable rule would be wrong in some cases, a very fair guide is to keep three pseudo-bulbs behind each lead. As the plants come to be potted the severed portions can be taken away, and oftentimes the plant can be potted in a smaller receptacle and good accrues all round.

Gatton Park Gardens, Surrey.

W. P. BOUND.

DENDROBIUMS.

DENDROBIUMS have always been favourites in gardens, though of late years the brilliant species and hybrids of the *Cattleya* group and the beautiful *Odontoglossums* have out-distanced them in popularity; and the latter possess the distinct advantage of requiring much less heat for their culture. Few genera, however, present such a rich and varied series of beautiful garden plants, and the profusion with which their flowers are produced, and their value for decorative purposes, render them indispensable wherever warmth-loving Orchids are grown. The great majority are spring-flowering



Fig. 2. *DENDROBIUM THYRSIFLORUM*.

plants, but others bloom in the summer and autumn, and in any case it is easy to secure a succession of flowers for a considerable period. It may be interesting to bring together a series of figures to illustrate to some extent the wealth of beauty possessed by the genus.

D. THYRSIFLORUM (fig 2) is a very beautiful Burmese species, having numerous pendulous racemes of white flowers, with an orange yellow lip. It is easily grown into specimen plants, and flowers with the greatest profusion, though there is the drawback that it fades more quickly than

many others. It is a discovery of the Rev. C. Parish, and was introduced by Messrs. Hugh Low & Co. in 1864. The specimen figured was grown in the collection of Walter C. Clarke, Esq., Sefton Park, Liverpool. Its nearest ally is the North Indian *D. densiflorum*, in which the sepals and petals are buff yellow. *D. Farmeri* is also very similar, but has pink sepals and petals.

D. BRYMERIANUM (fig. 3) is a very remarkable yellow-flowered species, in which the lip is broken up into long branched fringes, not unlike a stag's horn in appearance. It is a native of Burma, and was introduced by Messrs. Hugh Low & Co. in 1874, and dedicated to W. E. Brymer.



Fig. 3. *DENDROBIUM BRYMERIANUM*.

Esq., Ilslington House, Dorchester, in whose collection it first flowered. The character of the lip is quite unique in the genus, though a greatly reduced fringe is seen in *D. fimbriatum*, a golden-yellow species, frequently having a large blackish-maroon blotch on the lip's disc. In that the flowers are borne in pendulous racemes, somewhat like those previously mentioned, but in *D. Brymerianum* they are borne singly or in groups of two or three. There is a variety *histrionicum*, described by Reichenbach, in which the fringe is less developed, and the flowers, which are said to

appear in the autumn, are self-fertilised, and seldom open properly, so that it is of no cultural value. The flower figured is from the collection of R. G. Thwaites, Esq.

D. HARVEYANUM (fig. 4) is anomalous in another respect, having the petals much fringed. It is an ally of the preceding, and has short racemes of deep yellow flowers, while the lip is also slightly fringed, as may be seen in the figure. It is a Burmese species, and was introduced by the Liverpool Horticultural Society, and dedicated to the late Enoch Harvey, Esq., of Aigburth, Liverpool, in whose collection it first flowered in 1893.

There are several other handsome yellow flowered species in cultivation. *D. clavatum* is a Himalayan plant bearing racemes of deep golden yellow

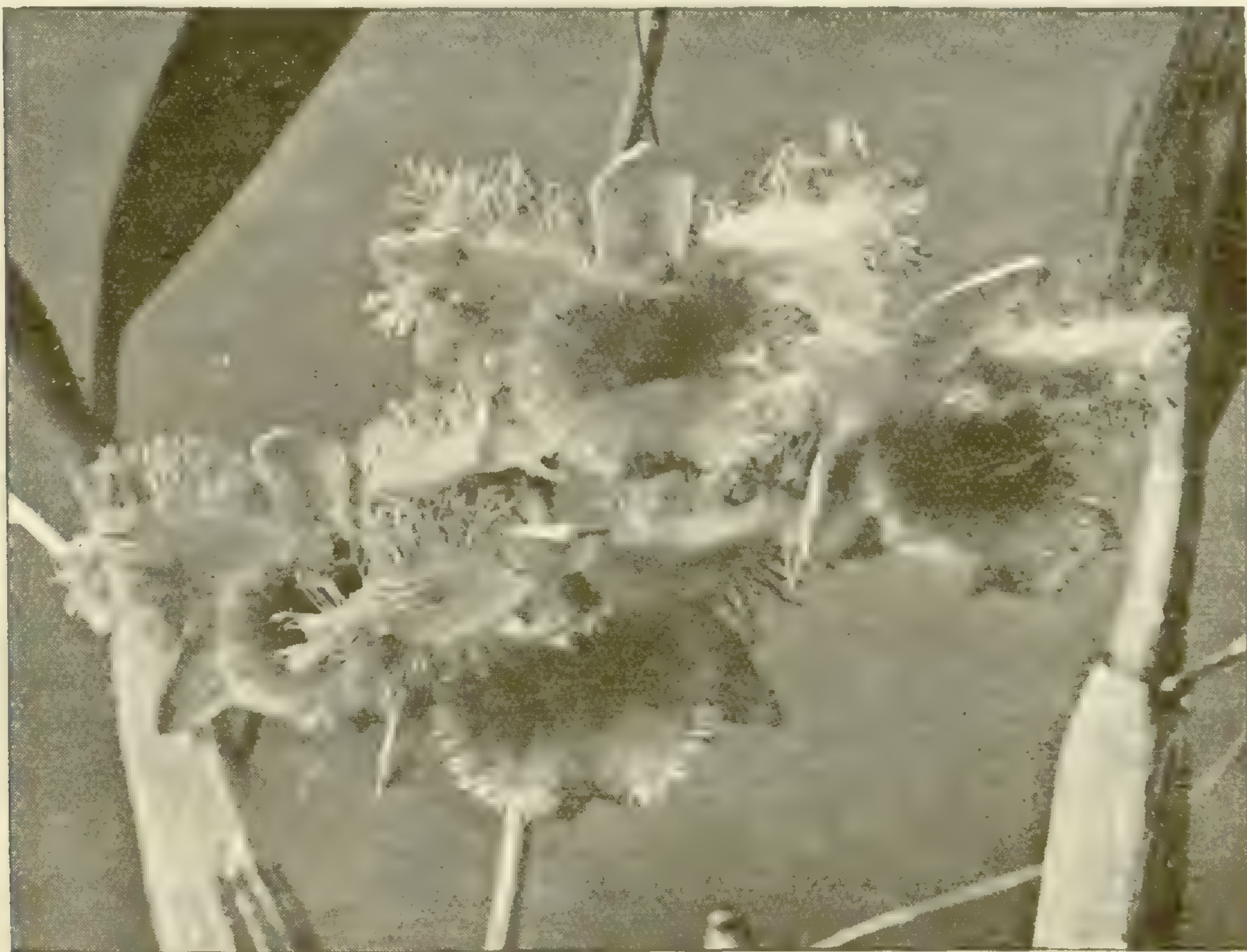


Fig. 4. *DENDROBIUM HARVEYANUM*.

flowers, with a dark blotch on the lip's disc. *D. Gibsoni* is a rather smaller-flowered species allied to the preceding and *D. fimbriatum*. It is a native of the Khasia Hills, where it was discovered by Gibson, in 1836, when collecting for the Duke of Devonshire. *D. aggregatum* is a dwarfer Burmese species, having rather slender pendulous racemes of numerous yellow flowers. It was introduced by the Horticultural Society over 70 years ago. *D. Jenkinsii* is very dwarf, and bears erect solitary flowers, individually much resembling the preceding. It was discovered in Assam by Captain Jenkins, and introduced to cultivation about 70 years ago. *D. chrysotoxum* is a Burmese species bearing racemes of bright yellow flowers, and has been known about 60 years, while *D. suavissimum* is an allied

plant of later introduction, distinguished by the presence of a dark maroon blotch on the disc of the lip. *D. chrysanthum* is a very handsome autumn-flowering species, a native of the Himalayas, which was introduced to cultivation by Wallich as long ago as 1828. The deep golden yellow flowers are borne in axillary fascicles, and are very showy. There are several other yellow-flowered species which are occasionally met with in cultivation.

D. HILDEBRANDII (fig. 5) is a native of the Shan States, where it was discovered by H. H. Hildebrand, Esq., and sent to Messrs. Hugh Low &



Fig. 5. *DENDROBIUM HILDEBRANDII*.

Co., who bloomed it in 1894. It has bright yellow flowers, and the sepals and petals are twisted, in which respect it bears some resemblance to *D. tortile*, though the colour is very different. In its robust habit and pseudobulbs it recalls *D. nobile*. It is very floriferous, and Mr. Hildebrand states that it grows in magnificent huge masses, and as many as 1,500 flowers have been counted on a single clump. The variety *oculatum* is distinguished by having a pair of eye-like blotches in the throat of the lip. It

has been successfully hybridised with *D. nobile*, *Wardianum*, *aureum*, *Findlayanum*, and $\times$ *Ainsworthii*, resulting in a series of handsome hybrids.

(To be continued).

CALENDAR OF OPERATIONS FOR JANUARY.

THE Calendar announces the advent of a new year, and the gradually lengthening days will soon proclaim the fact to the Orchidist, though for the present we are in the dull winter season, and must continue the same course of treatment. Any attempt to hasten matters by forcing the fires when the weather is inclement outside would be premature and probably disastrous. Should the weather be severe additional protection may be afforded by letting down the blinds at night, and a mat suspended at the exposed end of the house is sometimes useful.

Ventilation will require care, so as to avoid giving the plants a chill, though a little air should be given whenever possible, especially in the cooler departments. Any increase of temperature above the normal should be by sunheat alone, when a rise of about five degrees will be beneficial, for the genial sunshine hastens the period of renewed vegetative activity.

Special care should be taken to prevent all drip from the roof, which is a fruitful cause of spot this season, when the cold outside leads to excessive condensation. If this cannot be altogether avoided care should be taken to move any plant into a safe position.

Damping down must also be carried out in accordance with the outside conditions, the main object being to secure the proper amount of atmospheric moisture. In cold weather, when a good deal of fire heat is necessary to keep up the temperature, more damping of the side walls, paths, &c., will be necessary than in mild genial weather. If the syringe is used for this purpose care should be taken not to wet the plants themselves at this early season.

Watering should be done with great care. Plants that are resting will require little attention, as in many cases just sufficient moisture in the compost to prevent shrivelling is all that is necessary. Those that are growing will require more moisture, but with evaporation reduced to a minimum they will only require attention occasionally if the atmospheric moisture is well regulated.

Cleanliness is a matter of great importance, and a close watch should be kept for insect pests, which soon work much mischief if allowed to get the upper hand. A plant infested with parasites is heavily handicapped, as they live upon the sap, and when it becomes sickly from this cause it often takes a long time to recover. A little timely attention will often prevent a bad outbreak.

The temperatures of the different departments during the present month should be kept about as follows :—

Odontoglossum house.—Day, 50° to 55° , with sun, 58° ; Night, 50° ; Morning, 45° .

Cattleya or Intermediate house.—Day, 60° , with sun, 65° ; Night, 55° ; Morning, 50° .

East Indian house.—Day, 65° , with sun, 70° ; Night, 60° ; Morning, 55° .

These figures are intended as a guide, but regard must be paid to the outside conditions. If the weather is mild and genial a slight increase may be allowed, but during a cold spell a slight fall is preferable to forcing the fires too hard.

COOL OR ODONTOGLOSSUM HOUSE.—A good many flower spikes will be pushing in this house, and plants in this condition should receive slightly more water, as well as those in flower. Should any spikes appear on weakly plants it is better to pinch them out as soon as possible, for the strain of flowering only makes matters worse, and weak, puny spikes are of little decorative value. *Sophranitis grandiflora* will now be producing a wealth of its brilliant flowers.

CATTLEYA OR INTERMEDIATE HOUSE.—*Lælia anceps* and some other Mexican species will now be making a fine show. *Cattleya Trianae* and *C. Percivaliana* will be rapidly developing their buds, and should be placed at the warm end of the Cattleya house. Fluctuation of temperature should be avoided, or some of the buds may turn yellow, and fail to open. Very little will require attention here beyond the ordinary routine work.

WARM OR DENDROBIUM HOUSE.—Many of the *Dendrobiums* are now developing their buds, and should be allowed to come away steadily, as too much heat or too much water at the root tends to produce blooms of poor quality, and some may turn yellow and fall off. Strong plants will produce a profusion of flowers during the next few months, foremost among them being *D. nobile*, *Wardianum*, *crassinode* and *aureum*, with their numerous hybrids. Here also little will require attention beyond routine work, though the time should be utilised in preparing for the busy season not far distant. Supplies of clean pots and materials for compost should be got in and prepared ready, so that when the time for potting arrives the work may be done as expeditiously as possible. Some hints on this subject were given last month.

Seedlings of all kinds will show an increased rate of growth as the days lengthen and the amount of sunlight increases, and any that require potting on and are showing increased root action may be shifted into a size larger pot. The old compost need not be removed unless any should appear unhealthy. Seedlings generally require less rest in the dull season than established plants, and as the object is to get them large enough to

flower within a reasonable period their growth should be assisted as much as possible. Seeds of epiphytic Orchids that have been kept in bags through the winter had better be kept a little longer, so that they may have more genial weather when they begin to germinate. Cypripedes seem more impatient of control, and may be sown on the pots of the parent species as they ripen. Their germination seems erratic, but as soon as the young seedlings are large enough they may be pricked off and treated with the rest. It is a very interesting branch of Orchid culture.

PAPHIOPEDILUM × FRANKEANUM.

HERE is another surprise. A leaf and flower of a Paphiopedilum have been submitted to Kew for determination by M. Theodore Franke, Cross-Ottersleben, near Magdeburg, Germany, with the remark that the plant was found in an importation of *P. Curtisii*, and is believed to be a natural hybrid. The resemblance to *P. Curtisii* is obvious, but the petals are broader, and bear a number of good-sized round spots, in which respect, and in some others, it recalls *P. tonsum*. The fact affords a clue to its origin. *P. tonsum* itself came unexpectedly. When Mr. Curtis was in Sumatra, collecting for Messrs. James Veitch & Sons, he discovered and sent home a new Cypripedium, which, on its flowering, was described by Reichenbach under the name of *C. Curtisii*, but shortly afterwards the same importation yielded a second species, which Reichenbach described as *C. tonsum*. The two grow intermixed, and the leaves are so much alike in colour and markings, that Curtis took them for one. Both are flowering at Kew at the present time, and a comparison of the materials sent by M. Franke leaves no doubt of its being a natural hybrid between them. It is surprising that it has not been recorded before, and we do not find that the cross has been made in gardens, though we hope it will now be attempted. The hairs of the petals are rather longer than in *P. Curtisii*, which is curious, seeing that *P. tonsum* is devoid of hairs. The fact suggests an ancestral stimulus, for *P. tonsum* is probably descended from a hairy ancestor. It is a very interesting discovery. R. A. R.

LÆLIO-CATTLEYA ISAACSII.

AN interesting Orchid has just flowered in the collection of Max Isaacs, Esq., Wildecroft, Blundellsands, near Liverpool. His gardener, Mr. Driver, writes: "We have flowered the enclosed, and should be glad to know if it is a freak of *Cattleya Harrisoniana* or a hybrid. It was imported about two years ago, and is flowering from a rather weak bulb." He further remarks that it has single leaves on all its bulbs, which have more of the shape of *Cattleya Mendelii*, the longest measuring nine inches, though there is a resemblance to *C. Harrisoniana* in the shape and texture of the leaves.

The flower sent shows the most unmistakable resemblance to *C. Harrisoniana*, but the segments are more membranous and the petals broader. The pollinia are exactly those of *Lælio-cattleya*, and it is evident that some *Lælia* was the second parent. *L. Boothiana* is known to grow with *Cattleya Harrisoniana*, and this would account for the broader petals, though there is a trace of a paler mottling than would have been expected from such a parentage. I at first suggested a comparison with *L. xanthina*, and Mr. Driver replied that there was a certain resemblance, though the leaves were not so long as in that. It was purchased at Messrs. Protheroe and Morris' Sale Rooms in the early part of last spring, and had then flowered from its first bulb, and was labelled "See again." The flower is purple, with some yellow on the disc of the three-lobed lip. The flower is rather small for a *L. Boothiana* hybrid, but this may arise from the plant being weak. *L. xanthina* is not known to grow with *Cattleya Harrisoniana*, and the second parent must remain somewhat doubtful for the present. We hope to see the plant again when it becomes stronger, and in the meantime should like to see the supposed parents crossed together.

R. A. R.

HABITAT OF ODONTOGLOSSUM CRISPUM.

IN answer to an article by Mr. J. M. Black at page 326 of your last volume, and a note of Mr. Birchenall, at page 372, I can only state that my description of the different types of *Odontoglossum crispum* rests on a personal experience which dates as far back as nearly twenty years. I described the variability of this species, just as I have seen and found them growing. I wish to add also, that my articles were written, not with a view for commercial purposes, but to aid those who take some interest or pleasure in studying the wide geographical distribution of this popular species.

FLORENT CLAES.

Brussels.

[It is only fair to M. Claes to state that his article was written at our request, and we personally thanked him for the information given. It should be remembered that the centre of activity in collecting *Odontoglossum crispum* has shifted since M. Claes made his first trip, and we have seen a most beautiful series of *O. × Wilckeanum* which were collected by him in 1884-5. There were twenty-two different forms, eleven with yellow ground colour, and eleven with white, with photographs of five of them. The flowers were selected alive and carefully dried, and present a remarkable range of variation in shape, colour, and markings. It is pretty clear that *O. luteopurpureum* was common in the district where they were collected, and at that time *O. Hunnewellianum* and its hybrid *O. × Adrianæ* were not known. It is, of course, no secret that M. Claes has

had collections from the new district, and there is great difference of opinion as to where the best forms are found. It was also M. Claes who kindly gave us the habitat of *Odontoglossum Harryanum*.—ED.

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LÆLIA × ADRIENNE.

ANOTHER very interesting and pretty natural hybrid has been sent by the Marquis de Wavrin, Chateau de Ronsele, Ghent, through Messrs. Sander & Sons, of Bruges. At the first glance it recalls a form of *L. pumila* with rather elongated sepals and petals, but on looking into the throat of the lip one detects instantly the prominent orange-coloured keels of *L. Jongheana*, which supplies the key to its origin, for it is clearly a natural hybrid between the two species, which are both recorded from the Province of Minas Geraes (see *O.R.* viii. p. 106). As the two parents resemble each other so much in colour there is little need of a description beyond saying that the flower is about intermediate in shape, with the addition of the *L. Jongheana* keels in the throat. The specific name, in commemoration of Mdlle. Adrienne de Wavrin, is given by request. It would be interesting to raise the cross artificially.

R. A. R.

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ORCHIDS IN SEASON.

A VERY beautiful *Odontoglossum* is sent from the collection of M. Jules Hye de Crom, of Ghent (gr. Mr. Coene). It was exhibited at the meeting of the Société Royale Linnéene et de Flore de Bruxelles on December 15th last, under the name of *O. crispum* memoria Battle of Waterloo, the plant carrying sixteen flowers. The ground colour is white, very evenly blotched with purple, somewhat after the fashion of *O. c. Mossiæ*. It is not stated whether it came as an imported plant.

A beautiful yellow form of *Cypripedium insigne*, called var. *Madame le Doux*, is sent from the collection of R. le Doux, Esq., Marlfield, West Derby, Liverpool. It is of excellent shape, with broad dorsal sepal, on which are some partially developed blotches, something after the style of *C. i. Ernesti*. The upper half is white.

Several fine Orchids are sent from the collection of W. Waters Butler, Esq., Southfield, Edgbaston, Birmingham. *Odontoglossum* × *Wilckeanum* *venerandum*, for which M. Ch. Vuylsteke received a First-class Certificate in May, 1903, is a large and beautiful form, with strongly toothed petals, and a light yellow ground colour, very regularly blotched with brown. Mr. Butler calls attention to its now flowering almost at the opposite time of year as curious. *Calanthe vestita luteo-oculata* is well known as a very beautiful winter-blooming Orchid, and the flowers now sent came from an imported plant. There are also two good forms of *Lælia anceps*, a very bright rose form, closely approaching *L. a. Hilliana*, and a beautiful white, which we think is *L. a. Stella*. All bear evidence of good culture.

NOTES.

Two meetings of the R.H.S. will be held at the Royal Horticultural Hall, Vincent-square, Westminster, during January, on the 14th and 28th, when the Orchid Committee will meet at the usual hour, 12 o'clock, noon.

The Manchester and North of England Orchid Society hold meetings at the Coal Exchange, Manchester, on January 9th and 23rd. The Committee meets at noon, and the exhibits are open to inspection from 1 to 3 p.m.

Another plant of the handsome *Cattleya* × *Imperator* has appeared, a flower having been sent from the collection of the Marquis de Wavrin, Chateau de Ronsele, Ghent. It is a natural hybrid between *C. granulosa* and *C. labiata*, and is most like the former in shape and the latter in colour, both characters, however, being somewhat modified.

ORCHID PORTRAITS.

ANGRÆCUM SESQUIPEDALE.—*Garden*, 1907, ii. p. 612, with fig.

CATTLEYA × FULVESCENS, WESTONBIRT VAR.—*Journ. Hort.*, 1907, ii. p. 505, with fig.

CYPRIPEDIUM × HANNIBAL.—*Journ. Hort.*, 1907, ii. p. 553, with fig.

CYPRIPEDIUM × SAN-AC-DERIE SUPERBUM.—*Journ. Hort.*, 1907, ii. p. 601, with fig.

ERIA LONGISPICA, Rolfe.—*Bot. Mag.*, t. 8171.

MILTONIA VEXILLARIA.—*Gard. Chron.*, 1907, ii. p. 406, fig. 168.

ODONTIODA DEVOSSIANA.—*Journ. Hort.*, 1907, ii. p. 529, with fig.

ODONTOGLOSSUM × ANDERSONIANUM.—*Gard. Chron.*, 1907, ii. p. 370, fig. 152.

ODONTOGLOSSUM GRANDE.—*Gard. Chron.*, 1907, ii. p. 387, fig. 160.

ODONTOGLOSSUM × JOHN CLARKE.—*Gard. Chron.*, 1907, ii. p. 380, fig. 156; *Gard. Mag.*, 1907, p. 885, with fig.; *Journ. Hort.*, 1907, ii. p. 579, with fig.

ANSWERS TO CORRESPONDENTS.

[Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An ADDRESSED postcard must be sent if a reply by post is desired (abroad, reply postcards should be used). Subjects of special interest will be dealt with in the body of the work].

J.W.P. *Oncidium micropogon* and *Epidendrum nocturnum*, the latter being the Orchid "found growing with some imported *Brassavola Digbyana*." This record is interesting, but the species is very widely diffused.

W.W.B. The *Odontoglossum* bought with imported *O. crispum* is *O. × Coradinei*, the natural hybrid with *O. Lindleyanum*. The imported *Calanthe* is the beautiful *C. vestita* var. *luteo-oculata*. The plant purchased as unflowered *Cattleya × Hardyana* is some hybrid of *Laelia pumila*, but the *Cattleya* parent we do not at present recognise.

Photographs received with thanks. C.C.M., C.R., S. & Sons

Some notes are unavoidably postponed till next month.

From a note on another page it will be seen that Orchidists have now the opportunity of trying Mitchell's Reliable Insecticide, which was so highly spoken of last month by Mr. Bound.

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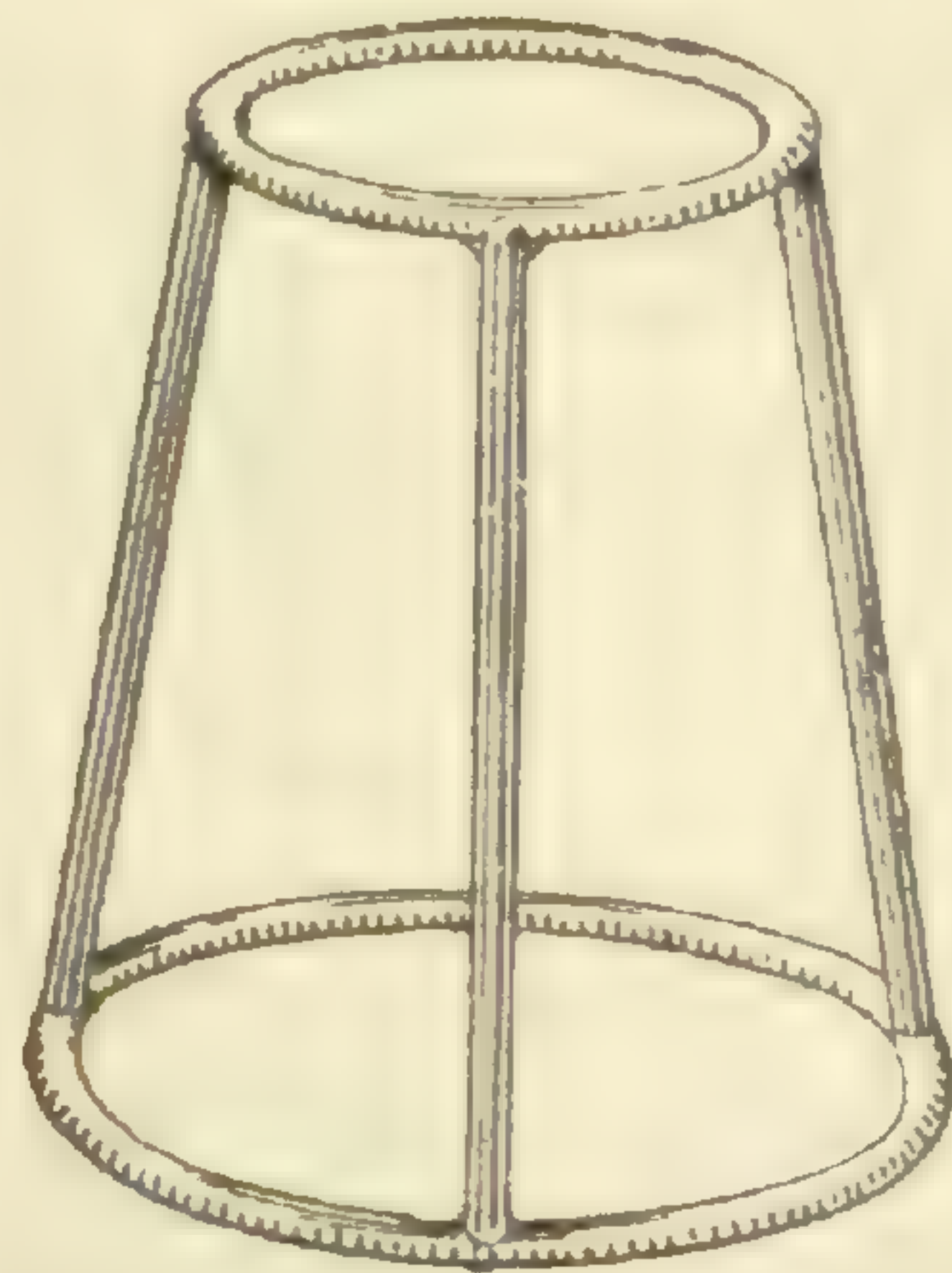
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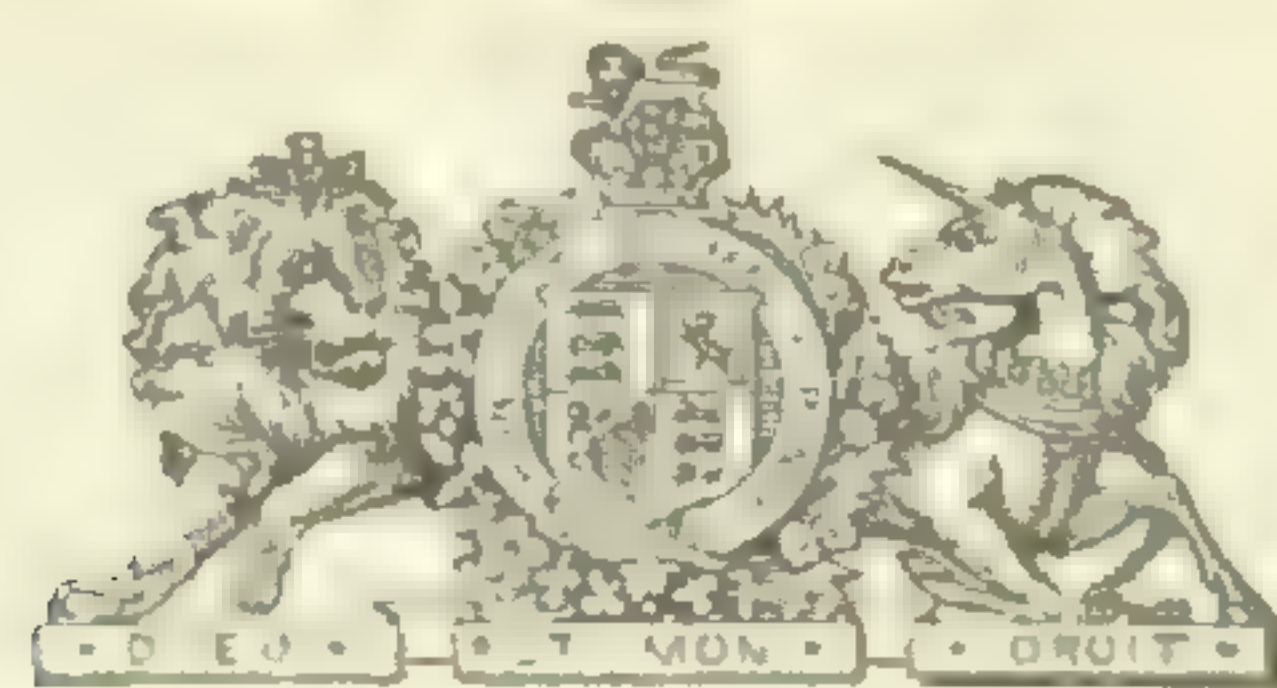
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VOL. XVI.]

FEBRUARY, 1908.

[No. 182.]

THE
ORCHID REVIEW:
An Illustrated Monthly Journal of Orchidology.

Contents.

	PAGE		PAGE
Albinism and Mendel's Laws of Inheritance	58	Orchids at Elmwood, Croydon	39
Answers to Correspondents	64	Orchids at Wisley	54
Calendar of Operations for February	50	Orchids, British	54
Chondropetalum Fletcheri (fig. 8)	56	Orchids from Ghent	62
Chondrorhyncha Chestertoni (fig. 9)	57	Orchids from Westonbirt	38
Cypripedes from Bridge Hall, Bury	53	Orchids in season	62
Cut flowers in water	63	Palm fibre for Orchid culture	38
Dies Orchidiani	33	Paphiopedilum callosum disepalous (fig. 7)	49
Hybridising with stored pollen	35	Photography, self-coloured	61
Notes	63	R.H.S. Orchid Committee	55
Odontioda × Devossiana (fig. 6)	41	Societies	42
Odontoglossums	34, 48	Manchester and North of England	
Orchid culture in Java	36	Orchid	45
Orchid Portraits	64	Royal Horticultural	42

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VOL. XVI.]

FEBRUARY, 1908.

[No. 182.

DIES ORCHIDIANI.

Another new *Odontioda*! but it surely must have been a freak of the Calendar which arranged its appearance on the last day of the old year. A meeting of the R.H.S. had been fixed for that day, and Messrs. Charlesworth exhibited *Odontioda Craveniana*, an interesting hybrid between *Cochlioda Noëtzliana* and *Odontoglossum cordatum*, which gained an Award of Merit. But if exhibited in 1907, it was not recorded then, and as it was not included in the novelties of 1907, we may consider it to be a plant of the present year. It links up the brilliant *Cochlioda Noëtzliana* with the Mexican *Odontoglossums*, and is a very promising acquisition.

This reminds me of a still more brilliant acquisition, at all events, so far as colour is concerned, namely, *Odontioda Devossiana*, a hybrid between *C. Noëtzliana* and *O. Edwardii*, which gained a First-class Certificate from the R.H.S. in the previous October, the exhibitor in this case being M. H. Graire, of Amiens. Its portrait may be seen at page 41 of the present issue. The combination of crimson with dark purple has yielded a hybrid of great brilliance of colouring, and I think it should now be crossed with some big white or blotched *Odontoglossum*. And a second cross would probably yield something remarkable, both in size and colour.

The incident recalls a curious record that appeared last year, to the effect that neither the *Cochlioda* nor the *Odontoglossum* could be successfully used as the pollen parent. It was promptly corrected, I remember, and had this not been the case, the present hybrid would have come as a still greater surprise than it did, for obviously one of the two must have been used as the pollen parent. One must evidently be careful when speaking of impossibilities in hybridising Orchids.

The question of hybridising with mixed pollen seems to have progressed since I last alluded to it. It appears that the capsule of *Lælia xanthina* crossed with mixed pollen derived from *Cattleya Warscewiczii* and *C. Dowiana aurea*, formerly mentioned, has now yielded both *Lælio-cattleya Phryne* and *L.-c. Ophir*, just as if the two crosses had been made separately.

Only two kinds of pollen were used, and two hybrids was the result. What would have happened if half-a-dozen kinds had been used is more than I can guess, but I fully expect that the experiment will now be made. I have never heard it stated how many pollen tubes one single pollen-mass of *Cattleya* will produce, but it must be enormous, for the number of seeds in a capsule is so great that if all were to germinate the grower would not know what to do with half of them. In practice, I believe, this is seldom the case, but too many seedlings from a capsule is not an unheard-of experience, and is highly inconvenient when space is limited. But if the hybridist could arrange to put a few grains from several different *Cattleyas* and *Lælias* on the stigma of some good seed parent he might get some surprising results. The suggestion may be taken for what it is worth, and there I will leave it.

The note about the distribution of Brazilian *Cattleyas*, given at page 21, is very interesting, and especially the information about *C. velutina*. Only a few months ago two natural hybrids from it were described, and now we hear of two others. It certainly does appear that our knowledge of the distribution of these plants is very limited, but I hope that our friend will hasten to enlighten us.

The same note indicates another possible development, for if seeds of *Cattleyas* and *Lælias* can be sent from Brazil, and successfully germinated here, there seems no particular reason why this should not also apply to certain other kinds which are difficult to import alive. I commend the information to some of our importers of Orchids.

ARGUS.

ODONTOGLOSSUMS.—At the meeting of the Bolton Horticultural Society held on Tuesday evening, January 7th, the subject was the Cultivation of *Odontoglossums*, by Mr. Wm. Holmes, Orchid grower to Mr. J. McCartney, Hey House, Tonge Moor, Bolton. *Odontoglossums* are found growing on rocks, or on the bark of trees, on branches and trunks in Tropical America. The most popular varieties are found on the mountain chain of South America, some at an altitude of 5,000ft., some at 7,000ft. to 9,000ft., and a few were found up to 11,000ft., where the rainy season was almost continuous throughout the year, causing a dense vapour similar to fog. Some are found in forests where the most light and air found its way, others in partial shade. He strongly advised growers to take all these matters into consideration when cultivating in greenhouses. A hearty vote of thanks was accorded. Mr. McCartney had a collection of *Odontoglossums* in bloom, chiefly *crispum* and *Adrianæ*s, for which he was awarded a Certificate of Merit.—G. C. in *Journal of Horticulture*.

HYBRIDISING WITH STORED POLLEN.

THE ORCHID REVIEW of 1903 contains an important series of articles on Orchid Hybridisation. On page 278 the difficulties are mentioned which are caused by the fact that very often two species which it may be desirable to cross do not flower together, and a means is indicated to overcome this difficulty by keeping the pollen in hermetically sealed tubes. On page 292 Mrs. E. Thwaites took up the subject, and showed by a number of extracts from her record book that stored pollen keeps its vitality for a long time, even if kept in *blue* tissue paper instead of sealed tubes.

This subject is of greater interest to the amateur Orchidist than to the professional. The latter with his hundreds and perhaps even thousands of plants of one species, will always have some that flower ahead of or behind their time. With the amateur the coincidence of the flowering of the two species which he wishes to combine will not be so frequent. The possibility of storing pollen removes this difficulty.

The experiments of Mrs. Thwaites, interesting as they are, are, however, not conclusive. It is not enough to know that stored pollen causes the formation of a pod. It is not even enough that in four of the cases recorded seed was obtained which germinated. It would be very interesting to learn whether the proportion of fertile seed obtained in such fertilisations was the usual one, and, above all, whether the seedlings obtained from such seed proved healthy and vigorous in the long run.

I have it on the authority of a well-known French professional grower of Orchid hybrids, that fertilisations with stored pollen prove worthless according to his experience, that very little fertile seed is obtained from them, and that the seedlings raised from it are sickly and never produce good plants. I should like to know whether these statements are really the result of unbiassed experience, or whether perhaps they are partly founded on prejudice. Unfortunately it would take years to answer this question by experiment. Perhaps Mrs. Thwaites and other enthusiastic hybridists have solved the problem already, and would be kind enough to let us profit from their experience by publishing their opinion and a few notes from their record books.

It would also be interesting to learn something of the behaviour of *Paphiopedilum* pollen on keeping. We all know how very different this pollen and the manner of its application to the stigma is from that of all other Orchids. The ordinary Orchid forms coherent masses of considerable hardness. These masses gradually disintegrate if brought into contact with the fluid which exudes from the stigma. The pollen of almost all *Cypripedilinae* forms a viscid substance which has the nature of an ointment, whilst on the other hand their stigmata exude no fluid.

I have ascertained the interesting fact that this pollen not only resembles an ointment, but that it is one in reality. It consists of a real fat of the consistency of butter, in which innumerable free pollen cells are enclosed. These cells are of yellow colour, and of a shape somewhat resembling a spherical tetrahedron. They are thus very similar to the cells which make up the ordinary Orchid pollen. But the most remarkable thing is the manner in which these cells are set free from their protective casing of fat and appropriated to their ultimate object.

The stigma of the *Paphiopedilum* flower produces no viscid fluid, but it contains a ferment similar to those which have of late been discovered in many seeds. This ferment saponifies the fat and makes it soluble in the water, which condenses and perhaps exudes on the surface of the stigma. The pollen cells gradually become surrounded by an aqueous liquid instead of a fatty one, and as soon as this is the case they begin to produce the well-known pollen tubes, which penetrate into the ovary and accomplish the fertilisation of the ovules.

It is comparatively easy to observe this remarkable phenomenon. If one examines the stigma of a *Paphiopedilum* a fortnight or three weeks after fertilising it, the pollen will be still there, but it has lost its transparency and has become opaque. Scraped off it can now be easily mixed with water (which is repelled by fresh pollen), and a glance through the microscope reveals the pollen cells swimming about in the aqueous liquid.

The lipolytic action of the ferment contained in the stigma of the *Paphiopedilum* flower is rather slow. This is the reason why this class of Orchid flower does not fade on being fertilised, but, on the contrary, seems to become more durable by the operation.

ORTO N. WITT.

Westend, near Berlin.

ORCHID CULTURE IN JAVA.

OUR readers will remember the very interesting articles on "Orchid-growing and Collecting in Java," from the pen of Mr. E. Connell (*O.R.* xiv. pp. 93, 257, 294). We have now another interesting letter from him, from which we have extracted the following. Mr. Connell was pleased to see two paragraphs devoted to Javan Orchids in a recent issue, namely *Phaius amboinensis* (*O.R.* xv. p. 284) and *Cirrhopetalum biflorum* (p. 286), and thinks that they came from his collection, and formed part of the many curious and interesting Orchids that come into his possession from time to time. He sent plants to England some time ago. He has greatly increased the list of species previously mentioned, and some of them Mr. J. J. Smith, of the Botanical Gardens at Buitenzorg, is unable to identify at present. Mr. Connell mentions a number of these, but the majority are not known in European gardens, and we may omit the details.

He then proceeds:—"I enclose a photograph showing an Orchid house in Java, with a mixed collection of plants, *Laelias*, *Cattleyas*, *Cypripedes*, *Phalænopsis*, *Dendrobies*, *Vandas*, *Cœlogynes*, *Oncidiums*, and *Miltinias*. There is a *Phalænopsis* there which looks like a cross between *P. violacea* and *sumatrana*. In leaf it resembles *P. violacea*, in flower *P. sumatrana*, but the blotching is pale brown, thick, and somewhat confluent, not in regular lines. It is a singular plant and the name appears to be unknown. The *Phalænopsis Schilleriana* has 120 flowers and five or six leaves, the largest leaf measuring about fifteen inches. The house is span-roofed, about thirty feet long by seventeen wide, and seventeen high to the ridge, the roof being formed of ordinary roofing tiles, with alternate rows of glass tiles, and the sides are formed of bamboo blinds. It has cement floors and staging. The plants are very healthy, and almost all the year there is a continuity of bloom. Surrounding the house are tall trees, which do not, however, shut out the light. *Vanda teres*, *V. Hookeriana*, *V. × Miss Joaquim*, and *Arachnanthe moschifera* are grown here, in open beds of soil, staked like peas. All are doing well, and were in flower when I last saw them, and were about eight feet high. The average shade temperature would be about 70°, but they were in a fairly sunny situation.

"I send you a species of bee which I captured in my Orchid house with the pollen of *Aërides* sticking to its head. It may interest readers to know something of the insects that fertilise Orchids in Java. The bee is known in the vernacular or native language as 'Kombang,' and has a long proboscis. It affects *Aërides*, sometimes *Vandas*, but chiefly strongly-scented Orchids. As a rule, small black ants do most of the fertilising of Javan Orchids, which seem to readily and easily become fertilised, producing healthy pods, from *Phalænopsis* to *Bulbophyllum*. As a rule, all my plants form a pod or two without any assistance from me. I have been crossing *Phalænopsis* with *Vanda suavis*, *Dendrobies* with *Vandas*, *Bulbophyllum* with *Cœlogyne*, and get healthy-looking pods, but time will alone show whether any results come from these experiments. Recently a *Vanda helvola* crossed by *Phalænopsis grandiflora* matured a healthy pod, which burst after eight months and twenty days. The seed looked healthy, but I have not seen any results so far. A *Dendrobium formosum* crossed with *D. mutabile* about nine months ago is still immature, so that the duration of time varies. *Arundinas* and *Spathoglottis* are very quick to mature. There are a few seedling plants growing that I picked off the rooting material of other Orchids, so that with patience and time, and experimenting, I may be rewarded with some startling novelty."

[The bee sent has been kindly identified for us, at the British Museum, as *Nylocopa tenuiscapa*, one of the Carpenter bees. It is widely distributed in India, Java and the Philippines.—ED.]

PALM FIBRE FOR ORCHID CULTURE.

THE following may interest readers of the *Orchid Review*. A couple of years ago, when casting about for a good material to tie some recently received Orchids on blocks and rafts, I was led to try—purely by accident—the fibre occurring in quantity on the trunks of some palms (*Arenga saccharifera*) in my garden, and was greatly surprised at the expiration of a year to find this fibre in as good condition as when first put in. It is noticeable that the growing tips of the roots of *Phalænopsis*, *Vandas*, *Aërides*, and such like, are often checked and frequently decay on coming into contact with copper or other wire, while string or most other fibres soon rot.

Last Spring I received some *Phalænopsis* from the Philippines, and noting that the material used in securing them to the pieces of branches to which they clung looked very much like my *Arenga* fibre, I wrote my correspondent inquiring what it was, and received the reply “*Arenga* fibre.” From this I have taken the cue, and use this fibre chopped up in lengths of a couple of inches, and find it prevents sphagnum from becoming too sodden when used in baskets, especially here, where plants hanging in such receptacles under trees, and subjected to continuous heavy downpours, suffer much from over-moisture if not kept well open in the compost.

Another small item, not unimportant, is that instead of using metal tacks or nails on the sides of rafts or the top rung or bar of teak—or, as we use here, Spanish cedar—baskets, I make holes with an awl or gimlet, inserting small wooden pegs, over the heads of which the twisted fibre is drawn to keep the plants and compost firmly in position, and any root points coming into contact with them curl around or pass by without decaying, and I think the careful grower will always like to see every root in healthy condition, either when moving or at rest.

J. C. HARVEY.

La Buena Ventura, Vera Cruz, Mexico.

 ORCHIDS FROM WESTONBIRT.

Two very handsome Orchids are sent from the collection of Major Holford, Westonbirt, Tetbury, by Mr. Alexander, each of which has received a First-class Certificate from the R.H.S. at recent meetings. *Cypripedium* × *Moonbeam* (*Lathamianum* *Thompsoni* × *Sallieri* *Hycanum*) is a magnificent flower of excellent shape, having a broad flat dorsal sepal, over 2½ inches broad, the colour white, becoming greenish yellow at the base, with a broad purple median band to beyond the middle, and a few parallel streaks on either side. The lip and petals are greenish yellow, the latter being very broad at the apex, with a narrow median line. *C.* × *Sultan* (*Mons. de Curte* × *Milo*, Westonbirt var.) has a broad round, green, heavily-blotched dorsal sepal, with a white margin, and the lip and horizontal petals rich chestnut brown.

ORCHIDS AT ELMWOOD, CROYDON.

THIS is one of the most important collections of Orchids near London, and, notwithstanding its nearness to the smoke, a singular lot of subjects that defy many growers to cultivate with any measure of success are found growing here quite freely. Mr. W. H. Young has been in charge here for a period of ten years, and during that time has dabbled a good bit in hybridisation, aiming more at obtaining genuine novelties than repeating crosses the results of which are known. Seedlings which require great skill and patience in raising have also been worked hard at, notably *Sophronis grandiflora* crosses, and a most interesting series of these brilliant little hybrids have been raised.

The Cattleya house contains a good number of hybrids, principally home-raised crosses, a few *C. × Fabia* being lately in flower. *Læliocattleya* Baroness Schröder $\times$ *Sophronis grandiflora*, and *Cattleya* Trianae $\times$ *Brassavola venosa*, should prove interesting. *Lælia* Jongheana Kromeri, which is probably the darkest form of this species which has yet flowered, is represented by a good number of strong plants, which grow very freely here. A couple of dozen *Cattleya gigas* have become interesting from the fact that out of the four that have bloomed two have proved to be *C. Dowiana aurea*. The *Cattleya Mendelii* varieties include Mrs. Shee, Her Majesty and His Majesty, the two latter having received the premier award at Manchester. Most of the albino Cattleyas are represented. A plant of *Zygopetalum Gautieri*, growing on a piece of tree fern, flowers every year without disturbance. There is also grown with the Cattleyas a good collection of *Cymbidiums*, while along the centre of the middle stage are a number of *Sobralias*, the varieties *alba* and *xantholeuca* being very fine. *S. Sanderiana* has reeds eight feet high. A fine specimen of *Epidendrum × Endresio-Wallisii* has thirteen stems, five of which are flowering, some of the stems being 2½ ft. high. *Diurus longifolia* is a unique botanical species from West Australia. It is of bulbous growth, with flowers somewhat resembling a brown vetch. *Cattleya Mossiæ* Elmwood var. and *C. labiata* Elmwood var. are both exceedingly dark in colour and fine shape. A great many things rarely met with are accommodated with the Cattleyas, which are growing in a house which would be generally condemned as being much too lofty for its work, and the wood work is much too heavy, but the plants generally are clean and in excellent condition. It is satisfactory to find representatives of widely different genera doing so well under the one roof, and the happy condition of the plants speaks well for the care taken and the cultural capabilities of Mr. Young.

In the *Odontoglossum* house considerable progress has been made in recent years in the raising of seedlings, and we encounter a lot

of two or three hundred as we enter this house, but they are, for the most part, a considerable way off flowering size, being mostly seedling growths. They include *Oncidium crispum* × *Cochlioda Noetzeliana*, *Odontoglossum loochristiense* × *O. crispum* Rossendale, the last crossed with *O. Adrianæ Cobbianum*, *O. Uro-Skinneri* × *Cochlioda Noetzeliana*, the last crossed with *O. hastilabium*, &c. The *Odontoglossums* are in excellent condition, and the quality of the flowered varieties is high, as they have been seriously weeded out as flowering seasons have come and gone. There are at present a matter of 500 to 1,000 established pieces still to prove. *O. c.* Rossendale, the distinct and renowned Lady Jane, and a large number of other well known blotched varieties of *crispum* are included in this collection. There is here a remarkable specimen of *Odontoglossum coronarium* growing on a raft. It has twenty-five to thirty bulbs, *all leaved*, with seven leads, one of which is throwing up a spike. The raft is standing upright, and the last made bulbs are quite abnormal in size. This is evidently the way to grow this plant, instead of suspending it prostrate in a basket. *O. citrosmum roseum* is carrying a pod, the pollen parent being *Cochlioda Noetzeliana*. The rare *Oncidium Sanderianum*, which has never yet flowered in this country, grows well here, making spikes as large as *O. macranthum*, but all the buds turn to leaves.

In the next house, a three-quarter span with south-west aspect, a large variety of things are grown. *Bulbophyllum barbigerum*, the rare *B. anceps* and *B. Lobbii* are all doing well. Two plants of *Vanda Sanderiana*, which is considered a difficult plant to keep in good health, flower here every year. Several plants of *Cœlogyne pandurata* have been propagated from one small piece. A batch of seedlings of peculiar interest is *Diacrum bicornutum* crossed with a white *Cattleya Mendelii*. The seed was sown six weeks after podding. The plants are now moving on towards flowering size. Another bigeneric hybrid is the same *Diacrum* crossed with *Brassolælia Digbyanopurpurata*. Quite a wonderful little lot of *Sophronitis* crosses have been raised in this house. Practical raisers know the difficulty attending the raising of *Sophronitis* seed, and will appreciate Mr. Young's success. *Sophronitis grandiflora* has been crossed with the following and successfully raised—*Cattleya Dowiana aurea*, *C. Schilleriana*, *Epidendrum atropurpureum*, *Lælia Gouldiana*, *L. anceps waddonensis*, *L. flava*, and *Lælio-cattleya blechleyensis*. As the pollen parent the *Sophronitis* has been successfully used with *Cattleya Percivaliana*, *C. Leopoldi*, *C. Aclandiae*, *C. bicolor*, *C. aurea*, *Lælia Jongheana*, *L. præstans*, *Lælio-cattleya blechleyensis*, and *L.-c. elegans*. Many of these are still small and few in number. A secondary hybrid, *Cattleya Harrisoniana* × *Soprocattleya heatonensis*, should yield some fine things of good constitution.

J. M. B.

ODONTIODA DEVOSSIANA.

THE accompanying figure represents a very interesting and handsome hybrid, obtained by crossing *Odontoglossum Edwardii* with the pollen of *Cochlioda Nøtzliana*, which obtained a First-class Certificate from the R.H.S. on October 29th last, when exhibited by M. H. Graire, Amiens, France. The plant exhibited bore a compact panicle about two feet high, and two dozen crimson flowers, with the disc of the lip bright yellow. The *Journal of Horticulture*, to which we are indebted for the loan of the block, remarks:—"It is a most interesting and handsome introduction, and when hybridisation can give us things like this, one might well say that the science of flower breeding is well understood, and that workers in this direction have achieved the miraculous." The remark might well apply



Fig. 6. ODONTIODA DEVOSSIANA.

to the five other members of this curious little artificial genus, one of which has appeared since the advent of our present subject, namely, *Odontioda Craveniana* (*Cochlioda Nøtzliana* ♀ × *Odontoglossum cordatum* ♂), which gained an Award of Merit from the R.H.S. on the last day of 1907, when exhibited by Messrs. Charlesworth & Co., the raisers. It is noted at page 43 of the present issue. The others were summarised exhaustively by Mr. Crawshay at pp. 270-272 of our last volume. Returning to our subject, we may note that the flowers clearly combine the characters of both parents, both in shape and colour, and the latter has been described as "rich deep port-wine crimson." It is certainly a brilliant acquisition.

SOCIETIES.

ROYAL HORTICULTURAL.

A MEETING of this Society was held at the Royal Horticultural Hall, Vincent-square, Westminster, on the last day of 1907, when the Orchid exhibits were not numerous, and the attendance very small. The awards consisted of three Medals, one First-class Certificate, and two Awards of Merit.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), showed *Lælia anceps* *Schröderæ* *Theodora*, a very richly-coloured form, *Cypripedium* × *Bellerophon* (C. × Mrs. Tautz × *Calypso*), a handsome thing, having the dorsal sepal heavily blotched with chocolate, the spots becoming purple on reaching the broad white margin, and the petals and lip yellow suffused with brown. A First-class Certificate was given to C. × *Moonbeam* (*Thompsoni* × *Sallieri* *Hyeaenum*), a noble form, having a very broad round white dorsal sepal, with yellowish green base, a broad purple median band to beyond the middle, and a few light purple lines on either side, while the lip and broad petals are greenish yellow, the latter with a purple band down the centre.

J. H. Craven, Esq., J.P., Keighley, Yorks (gr. Mr. Corney), received an Award of Merit for *Cypripedium* × *Troilus* var. *Cravenianum* (*insigne* *Harefield Hall* var. × *nitens* *magnificum*), a large and handsome form, approaching the first-named parent, but having a flatter dorsal sepal, with smaller, more numerous spots.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), showed *Cypripedium* *insigne* *Arnoldii*, a greenish yellow form, with greenish raised blotches on the dorsal sepal.

Messrs. J. Cypher & Sons, Cheltenham, staged a very fine group, to which a Silver Flora Medal was given. There was a fine specimen of *Miltonia* × *Bleuana*, bearing two spikes in the centre, with some good coloured *Lælia anceps*, interspersed with *L. autumnalis alba* and *L. × Gouldiana*, at the back, other good things being a selection of yellow forms of *Cypripedium* *insigne*, a pretty hybrid between *C. hirsutissimum* and *C. × Mons. de Curte*, the fine *C. × Charlesianum* Cypher's var., *C. × Troilus* var. *Nogii*, very regularly margined with white, and others, with some good *Calanthe* × *Veitchii* *superba* and *C. × William Murray*.

Messrs. Hugh Low & Co., Enfield, received a Silver Banksian Medal for a good group, including *Cypripedium* *insigne* *Harefield Hall* var., the handsome *C. × Adrastus* var. *Mariæ*, *C. × Ville de Paris*, *C. × Mrs. Alfred Fowler*, and other good things, the centre being a fine example of *C. × Mrs. William Mostyn*, having a deep rose-purple dorsal sepal margined with white.

Messrs. J. W. Moore, Ltd., Rawdon, Leeds, also received a Silver Banksian Medal for a good group of *Cypripediums*, including the handsome *C. × Boadicea majesticum*, *C. × aureum virginale*, *C. × a. delicatum*, a good *C. × Niobe*, *C. × LEEANAM Imperator*, the richly coloured *C. insigne McNabianum*, and other good things.

Messrs. Charlesworth & Co., Heaton, Bradford, received an Award of Merit for *Odontioda × Craveniana* (*Cochlioda Nætzliana × Odontoglossum cordatum*), a very interesting hybrid, most like the *Cochlioda* in shape, and having red sepals and petals, and a broadish salmon-red lip, becoming cream white in front, and the crest yellow.

M. Mertens, Ghent, showed white and coloured forms of *Cattleya Trianae*, and a few good *Odontoglossums*, including *O. × amabile*, *O. × Vuylstekei*, and a home-raised *O. × Wilckeanum*.

Messrs. Sander & Sons, St. Albans, showed a very fine home-raised form of *Odontoglossum crispum*, the ground colour being tinged with rose, and the segments heavily blotched with rose-purple.

Messrs. James Veitch & Sons, Chelsea, sent two good forms of *Cypripedium × Countess of Carnarvon* (*villosum × Euryades*), one having much larger spots than the other.

At the meeting held on January 14th the display of Orchids was the smallest that has appeared for a long time, which was doubtless due to the severe weather, though the quality was excellent, and the awards consisted of four First-class Certificates, one Award of Merit, and three Medals.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), received a First-class Certificate for *Cypripedium × Sultan* (*Mons. de Curte × Milo Westonbirt var.*), a remarkably fine hybrid, having a very large emerald-green dorsal sepal heavily blotched with purple, with a broad white margin, half an inch wide, yellow petals, tinged and veined with mahogany red, and with a few dark spots at the base, the lip rich brown, margined with yellow, and the staminode yellow. The lateral sepals were free, a quite unusual character. He also received an Award of Merit for *Lælio-cattleya Corunna*, a richly-coloured hybrid of unknown parentage, though bearing some resemblance to *L.-c. Ingramii* in colour and markings.

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. Ballantine), received a First-class Certificate for *Odontoglossum × Bingelianum*, a very beautiful hybrid of unrecorded parentage, originally shown in November, 1905. It now bore a strong inflorescence, of large canary yellow flowers, barred and blotched with light reddish brown, and a white lip, with a large brown blotch in front of the crest.

J. Bradshaw, Esq., The Grange, Southgate (gr. Mr. Whitelegge),

exhibited the beautiful *Odontoglossum* × *venustum* Apollo, having large white flowers, heavily blotched with claret-red, and *Lycaste Skinneri armeniaca*.

Sir Jeremiah Colman, Bart., Gatton Park, Reigate (gr. Mr. Bound), showed a fine specimen of *Cypripedium* × *G. F. Moore*, Gatton Park var. (Mrs. William Mostyn, Chardwar var. × *Sallieri aureum*), a very beautiful hybrid.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), sent a remarkably fine form of *Odontoglossum* × *waltonense*, obtained by crossing *O. Kegeljani* with *O. crispum* Raymond Crawshay, and having large purple blotches on a lemon yellow ground, and a white lip, bearing a large chestnut-brown blotch in front of the crest, and some smaller purple dots at the sides.

H. Little, Esq., Baronshalt, Twickenham (gr. Mr. Howard), sent a fine inflorescence of *Lælio-cattleya callistoglossa ignescens*.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent *Cypripedium* × *Actæus langleyense*, and another pretty hybrid called Mrs. Robert Lonsdale.

Messrs. J. & A. McBean, Cooksbridge, received a First-class Certificate for the handsome *Cypripedium* × *Minos Youngii* (*Spicerianum* × *Arthurianum*), in remarkably fine condition.

Messrs. Sander & Sons, St. Albans, received a First-class Certificate for *Odontoglossum* × *McNabianum* (*Harryanum* × *Wilckeanum albens*), a remarkably handsome hybrid, bearing a strong resemblance to *O.* × *Wilckeanum*, and having the cream-coloured ground colour largely obliterated by claret-coloured bars and blotches, and the base of the lip also densely spotted with a lighter colour.

Messrs. Heath & Sons, Cheltenham, received a Silver Banksian Medal for a group of *Cypripediums*, including varieties of *C. insigne*, *C.* × *Euryades*, the handsome *C.* × *Swinburnei magnificum*, and others.

Messrs. Hugh Low & Co., Enfield, also received a Silver Banksian Medal for a good group of *Cypripediums*, prominent among them being *C.* × *aureum virginale*, *C.* × *a. Hyeaenum*, *C.* × *Mrs. Wm. Mostyn*, *C.* × *Maudiaë*, *C.* × *Chapmanii*, *C.* × *chrysotoxum*, good forms of *C.* × *Leeanum*, *C. insigne*, and others.

Messrs. Charlesworth & Co., Heaton, Bradford, sent a fine *Cypripedium* × *Fowlerianum*, a good form of *C. insigne*, *Odontoglossum crispum* Lyoth, a richly blotched variety, and others.

Messrs. Stanley & Co., Southgate, showed a white form of *Cattleya Trianaë*, with a purple blotch on the front of the lip.

Mr. H. A. Tracy, Twickenham, showed *Cypripedium insigne Berryanum*.

Mr. J. Gregory, of Croydon, was the afternoon lecturer, and showed a number of lantern views of past exhibitions held by the Society, including several celebrated groups of Orchids. After the meeting a gentleman threw a few beautiful coloured photographs on the screen, and it was understood that he will show some of these at the next meeting.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

At the meeting held at the Coal Exchange, Manchester, on January 9th, the following members of the Committee were present: Messrs. E. Ashworth (Chairman), R. Ashworth, Warburton, Cowan, Shill, Cypher, Ward, H. H. Smith, P. Smith, and Parker. There was again a capital show of flowers, chiefly *Cypripediums*, and the awards included six First-class Certificates and sixteen Awards of Merit. The show is now open till 4 p.m.

Messrs. Cypher & Sons, Cheltenham, staged a nice group of well-grown mixed plants, chiefly *Cypripediums*, relieved with arching sprays of *Odontoglossums* and *Lælia anceps* in variety (Silver Medal).

J. McCartney, Esq., Hey House, Bolton (gr. Mr. Holmes), staged a group containing many fine varieties. I noted a fine *Cypripedium* $\times$ *cæno-superbiens*, *C.* $\times$ *St. Vincent* (*insigne sylhetense* $\times$ *Boxallii atratum*) (Award of Merit), *C. insigne* var. *J. McCartney* (Award of Merit), a fine plant of *Cymbidium Tracyanum*, *Cattleya chocoensis alba*, &c., &c. (Silver and Bronze Medals).

H. J. Bromilow, Esq., Rann Lea, Liverpool (gr. Mr. Morgan), exhibited a very fine group of *Cypripediums*, which gained one of the Society's Silver-gilt Medals. The beautiful *C.* $\times$ *Venus*, Rann Lea var. was awarded a First-class Certificate. *C. insigne Monarch* gained an Award of Merit, along with *C.* $\times$ *Archimedes* var. *Excelsior*. I noted a good flower of *C.* $\times$ *Lord Ossulton*, one of *C.* $\times$ *bingleyense*, and many good things which had previously received awards.

Messrs. Heath & Son, Cheltenham, staged a group of *Cypripediums*, in which I noted *C.* $\times$ *Mrs. Tautz*, and a fine pan of *C.* $\times$ *Leeanum giganteum* (Silver Medal).

E. Rogerson, Esq., Didsbury (gr. Mr. Price), showed a few good *Cypripediums*, and gained an Award of Merit for *C. Godefroyæ leucochilum*.

A. Warburton, Esq., Haslingden (gr. Mr. Dalgleish), made his group into two, and was awarded two Silver Medals. Awards of Merit were given to *Cypripedium* $\times$ *Mrs. Moseley*, *C.* $\times$ *Leeanum* var. *Avalanche*, and *C.* $\times$ *Buchanianum*. The group included *C.* $\times$ *Leeanum Clinka-berryanum*, many yellow forms of *C. insigne*, *Odontoglossums*, *Calanthes*, &c.

Messrs. Keeling & Sons, Westgate Hill, Bradford, staged a nice mixed group, in which I noted two fine dark *Odontoglossum Uroskinneri* and *Lycaste lasioglossa*.

W. Farrer, Esq., Carnforth, showed several well-grown plants, among which I noted a grand plant of *Cypripedium* × *Leeanum* *Clinkaberryanum* and *C.* × *L.* *giganteum*.

J. H. Craven, Esq., The Beeches, Keighley (gr. Mr. Corney) showed the very fine *Cypripedium* *Juno*, Craven's var. (First-class Certificate), and *C. villosum* var. Mrs. Cary Batten, the colouring of which was exceptionally fine, the dorsal sepal being yellow-green, with a good white margin, and the chocolate stripes almost a confluent blotch, while the petals were very broad (First-class Certificate).

Mr. W. Shackleton, Great Horton, Bradford, showed a mixed group of *Cypripediums* and *Odontoglossums*, amongst which I noted a well-flowered plant of *Platyclinis* *Cobbiana* (Bronze Medal).

S. Gratrix, Esq., Whalley Range (gr. Mr. Shill), showed *Cypripedium* *insigne* var. A. J. Balfour (First-class Certificate), a finely-balanced flower with well spotted dorsal sepal, and *C.* × *Prince of Wales* (Award of Merit), a hybrid with much *insigne* blood in it.

G. S. Ball, Esq., Burton, Westmorland (gr. Mr. Herdman), staged a group including many very fine *Cypripediums*, as *C.* × *Earl of Tankerville* (First-class Certificate), *C. insignis* *Berryanum* (First-class Certificate), *C.* × *Thos. Mills* (Award of Merit), *C.* × *nitens* *Queen of Yellows* (Award of Merit), and *C.* × *Hitchensiæ* var. *vivicans* (Award of Merit). I noted also a very fine *C.* × *Maudiaæ* (Silver Medal for group).

Mr. W. Bolton, Orchid grower, Warrington, staged a small group of well-grown plants, among which I noticed a fine *Cypripedium* × *Actæus*, *C.* × *Leeanum* *Clinkaberryanum*, *C. insignis* *Harefield Hall* var., *Odontoglossum* × *Rolfeæ*, &c. (Bronze Medal).

Z. A. Ward, Esq., Cringlewood, Northenden, staged a beautiful group of mixed plants and gained the Society's Silver-gilt Medal. *Odontoglossum* × *Lambeauianum*, a flower of good form, evenly blotched with rich claret, was given an Award of Merit. The group included many varieties of *Odontoglossum* and *Cypripedium* of good quality.

R. Ashworth, Esq., Newchurch (gr. Mr. Fletcher), showed a very effective group, in which *Odontoglossums* predominated. In the centre stood a splendid *O. crispum*, well blotched and of fine shape and substance, and a fine *O.* × *Rolfeæ* × *crispum* *Franz Masereel*, with rosy ground. Others of note were *O.* × *Lambeauianum*, *O.* × *waltonense*, *Cypripedium* × *Euryades*, *New Hall Hey* var., &c., &c. (Silver Medal).

Messrs. Moore & Co., Rawdon, Leeds, showed an exceptionally fine *Cypripedium* × *Lawre-callosum*, also *C.* × *Leeanum* var. *Imperator* (Bronze Medal).

G. W. Jessop, Esq., Rawdon, showed the rare *Dendrobium* *Gouldii* and *Cypripedium* *insigne* *McNabianum*.

Messrs. Hugh Low & Co., Enfield, showed a few *Cypripediums* of good quality.

At the meeting held on January 23rd, the room was well filled with plants and flowers, and the following members of the Committee were present: Messrs. Duckworth, Warburton, Walmsley, Ward, Cowan, H. H. Smith, F. K. Sander, Keeling, Shill, Cypher, Leemann, Ashton and Parker. Over seventy plants were placed before the Committee.

G. Shorland Ball, Esq., Burton, Westmorland (gr. Mr. Herdman), staged a fine group of *Cypripediums* of undoubted quality. *C. × bingleyense*, Under Fell var., *C. × nitens* var. Eric, *C. × n. Drewett's* var., the very distinct *C. insigne Herdmanii*, and *C. × Alcibiades superbum*, all gained Awards of Merit. I noted a good *C. × Thalia* Mrs. F. Wellesley (Silver Medal for group).

S. Gratrix, Esq., Whalley Range (gr. Mr. Shill), exhibited *Cypripedium × Earl Egerton* (*Minos Youngii × Lceanum Clinkaberryanum*), *C. × aureum* var. Golden Glow, and *C. Rowena* (*Chamberlainianum × bellatulum*), each gaining a First-class Certificate.

Mr. J. Robson, Altrincham, showed a nice little group, in which I noted a fine *Odontoglossum × Wilckeanum* of good shape and colour, and a good *Cypripedium × Mona* (*Lceanum Albertianum × insigne giganteum*) (Award of Merit).

Messrs. Cypher & Sons, Cheltenham, staged a fine group of mixed plants, chiefly *Cypripediums* of good quality. *Cattleya Trianae* var. Princess Olga gained an Award of Merit, and I noted an imported plant of *Catasetum macrocarpum* bearing a spike of eight flowers (Silver Medal for group).

J. McCartney, Esq., Hey House, Bolton (gr. Mr. Holmes), staged an effective group of miscellaneous plants, and gained the Society's Silver and Bronze Medals. I noted the rare *Cymbidium Holmesii* (*giganteum × Mastersii*) with a nice spike, *Lælia anceps Sanderiana*, *Cypripedium × Ville de Paris*, *C. × Lady Alice Stanley* (Award of Merit), and many other fine things.

H. J. Bromilow, Esq., Rainhill, Liverpool (gr. Mr. Morgan), staged the finest group of the show, and gained the Society's Silver-gilt Medal, also an Award of Merit for each of the following: *Cypripedium insigne* The Premier, *C. i. Rann Lea* var., *C. × George Singer* (*conco-niveum × bellatulum album*), and *C. × memoria Jerninghamiæ*. The group included many plants which had previously gained the First-class Certificate and Award of Merit.

Edward Rogerson, Esq., Oakdene, Didsbury (gr. Mr. Price), staged a small group, and gained an Award of Merit for *Cypripedium Persephone*,

Oakdene var. (exul $\times$ Lathamianum). C. $\times$ Boadicea was of good colour and substance.

Mr. W. Bolton, Orchid grower and importer, Warrington, staged an effective little group of *Cypripediums*, relieved with several fine *Odontoglossum* $\times$ *crispo-Harryanum*. I noted a fine C. $\times$ *Cassandra*, Westfield var., and several other good things.

M. Mertens, Mont St. Amand, Ghent, exhibited a few well-grown and flowered *Odontoglossum* hybrids of good colouring. O. *Vuylstekei* was of much merit, and O. $\times$ *amabile* of good shape.

Messrs. Stanley & Co., Southgate, staged a small group, in which I noted *Cypripedium* $\times$ *Triumph* (*triumphans* $\times$ *callosum*).

Ziba A. Ward, Esq., Northenden, put up a very pretty group, consisting largely of well-grown *Odontoglossums*, including O. $\times$ *waltonense*, and O. $\times$ *ardentissimum*, with many good *Cypripediums*, &c., and a finely-flowered pan of *Trichopilia suavis* in the centre (Silver Medal).

J. H. Craven, Esq., Keighley (gr. Mr. Corney), showed several good *Cypripediums*, amongst which I noted a fine C. $\times$ *Euryades magnificum*, C. $\times$ *Mrs. W. Mostyn*, &c., &c.

Messrs. Charlesworth & Co., Bradford, staged *Lycaste Skinneri alba*, *Cypripedium San-Actæus*, C. *Alcibiades superbum*, *Zygocolax* $\times$ *Wiganianus*, &c., &c. (Silver Medal).

R. Ashworth, Esq., J.P., Newchurch, showed a splendidly-flowered plant of *Dendrobium* $\times$ *Ethel*.

Messrs. Keeling & Sons, Westgate Hill, Bradford, showed *Dendrobium nobile Ballianum*, D. $\times$ *Schneiderianum*, D. $\times$ *Andromeda*, &c., &c.

Messrs. Hugh Low & Co., Enfield, received a Vote of Thanks for a small group.

A. Warburton, Esq., Haslingden (gr. Mr. Dalglish), staged a very fine group of mixed plants, and gained two Silver Medals in the different competitions. The group included many fine varieties which had been previously certificated, the whole relieved with sprays of well-grown *Odontoglossums*, &c.

H. T.



A TRIO OF ODONTOGLOSSUMS.—At page 369 of our last volume we published a short note bearing this title, acknowledging its source as “T. Anstiss in *Journal of Horticulture*.” We now learn that the note was originally written for our American contemporary, *Horticulture*, of Boston, U.S.A., by Mr. James Hutchinson, and appeared in its issue for October 26th, 1907. The *Journal of Horticulture*, through some inadvertence, omitted the source, hence we naturally ascribed it to them, and we hasten to make the necessary correction:

PAPHIOPEDILUM CALLOSUM DISEPALOUS.

THE annexed figure shows a normal and abnormal flower of *Paphiopedilum callosum*, which were produced by the same plant in the collection of C. C. Mann, Esq., Levanne, Gourock. The latter flower has been sent, together with a photograph, which was taken beside a normal flower for the sake of comparison. Mr. Mann, who has been a lover of Orchids for many years, thinks that the photograph will interest our readers, and he promises to report again next year if the plant repeats the freak. No reason can be assigned for the peculiarity, but Mr. Mann remarks that the plant is very strong. The character has been recorded in several other species. In 1896 a *Cypripedium insigne* was exhibited by H. Tate, Esq., Allerton Beeches, Liverpool, in which the upper and lower sepals were alike in shape and colour (*O.R.* iv. p. 32). It appeared in one of Messrs. Sander's importations,



Fig. 7. PAPHIOPEDILUM CALLOSUM, NORMAL AND DISEPALOUS.

in 1892, and was believed to be permanent. It must have been a similar form which was exhibited by G. F. Moore, Esq., under the name of *C. i. bisepalum* (*O.R.* xi. p. 363). *C. × Leeaenum grandisepalum*, exhibited by the late G. W. Law-Schofield, Esq. (*O.R.* viii. p. 58), evidently takes its name from a similar character, being described as "remarkable for having the lower sepal developed like the dorsal." And one such form has been figured, namely, *Paphiopedilum Charlesworthii* (*O.R.* v. p. 16, fig. 2). It appeared in the collection of Dr. Hoisholt, Stockton, California, and a second bud on the same plant afterwards showed the same character (*l. c.* p. 34).

CALENDAR OF OPERATIONS FOR FEBRUARY.

By W. J. MORGAN, Rann Lea, Rainhill, Lancs.

[In concluding last year's Calendar of Operations, Mr. Bound suggested that the experience of some northern grower would be useful, and we have pleasure in announcing that the Calendar for the coming year will be contributed by Mr. W. J. Morgan, gardener to H. J. Bromilow, Esq., Rann Lea, Rainhill, near Liverpool. Mr. Morgan was for two years with Messrs. T. Rochford, Turnford Hall Nurseries, Broxbourne; two years with J. Auchinvole, Esq., Park Hall, Dalmuir, N.B.; two years with Messrs. Charlesworth & Co., Heaton, Bradford; three years with Sir J. T. Brunner, Bart., M.P., Druid's Cross, Liverpool, as Orchid grower; and five years with H. J. Bromilow, Esq., as head gardener and Orchid grower. He has now charge of about four thousand Orchids, comprising *Cypripediums*, *Cattleyas*, *Dendrobiums*, *Lælias*, *Odontoglossums*, &c.—in fact a general collection. There are eight Orchid houses, devoted to the various subjects, including one Show House, where everything is put as it comes into flower. The fine exhibits staged at the meetings of the Manchester and North of England Orchid Society show that Mr. Morgan is a thoroughly capable grower, and we have no doubt that his experience will prove useful.—ED.]

CYPRIPEDIUMS.—At this time of the year, when practically everything else is resting, we turn our attention to the slipper class; and what a beautiful class it is! especially when one is situated, as we are, in the manufacturing and colliery districts, where for weeks together during the winter months we rarely see the sun. One can then appreciate the "Slipper Orchid." Through all the fogs the *Cypripediums* are our certain friends.

C. insigne and the *insigne* hybrids will now have finished flowering. As soon as the flowering season is past we commence potting and making specimens of the most desirable varieties. Examine the roots of each plant separately. It does the plant no harm to turn it out of the pot in any case. If it will not come out easily, unless the pot is broken it will require a larger size; but if, on the other hand, it comes out readily it would generally be better in a smaller pot. A good many growers still cling to the old idea that it is wrong to turn an Orchid out of its pot. Orchids would be much better grown if they were treated more as ordinary plants than something so valuable that they must not be disturbed under any circumstances. All the old sour material should be cleaned away from the roots before repotting, as then we find that the roots are not so liable to die off in the new material as when the plant is simply potted on without disturbing it. In the latter case, unless one is very careful, the old material gets sodden and sours the whole pot, and *Cypripediums* (in fact, any Orchid) will not root in a sour mixture. Most growers have a mixture of

their own, but I do not think it makes much difference what they are grown in as long as the conditions for growing are right. Our own preference will be mentioned presently. If the temperatures are kept even, and the house moist, newly potted plants will soon commence rooting.

The *C. Fairrieanum* and its hybrids will also require examining. Although this class does not want such large pots as the *insignes*, it is as well to give them ample room, as we find that in good-sized pots we get the finest flowers. Then there are the *Euryades*, *Actæus*, *aureum*, and many other sections which will require attention.

For *C. insigne* and strong rooting varieties we use a mixture of loam, peat, leaves, and chopped sphagnum in equal parts, and for the smaller-rooting varieties we use less loam, with plenty of crushed crocks mixed in. With a machine a boy can soon crush a sackful of crocks. I should advise everyone to get one of these crock-breaking machines, as they are great time-savers, and the dust from the crocks is much better to use than sand. We find by sifting out the small when crushing for pot crocking, we get sufficient to keep us going for potting mixtures.

The *C. bellatulum*, *niveum*, *Godefroyæ*, and *concolor* class requires rather more care than the other *Cypripediums*, especially *bellatulum album*, as it seems to have a knack of dying off almost while one is looking at it. They require a drier atmosphere and much less water at the roots. It is surprising how long they will stand and not shrivel, in fact they appear to appreciate neglect as regards watering. Any of these plants which are not showing for flower can now be potted or top-dressed, using small limestone chippings and crocks freely in the compost, as the less water the material holds the better for the plant. They are a beautiful class of *Cypripediums* and well worth a little extra care in their cultivation. Limestone can be used in potting the hybrids of the *bellatulum* group, as it keeps the leaves from going a sickly yellow, which one often sees in these hybrids, and also produces finer flowers.

SEEDLING CYPRIPEDIUMS.—There is a great difference of opinion as to when is the best time to sow *Cypripedium* seed, but I find myself that a great deal depends on what convenience one has for sowing. If a small house can be set apart for this work I do not think it makes any difference what time of the year the seed is sown; but if space is limited, and one is obliged to sow on any pots scattered about the *Cypripedium* house, then we find Spring the best time. As far as we have gone at present, the result of our work has not been very encouraging when the seedlings flowered, but we are hoping for better results. It is most interesting watching the tiny seedlings grow to flowering size, and somewhat compensates for the lost pleasure of watching imported *Cypripediums* flower. Great care is required when watering the seedlings which have been pricked off,

or the result will be disastrous. One of the automatic hand sprayers or a spraying syringe (which I prefer, as there is nothing to get out of order about them) should be used for watering them, as it damps them thoroughly without getting the pots sodden, and also helps to keep thrip down, which is one of the greatest enemies of seedlings of any description.

Keep the tiny plants clean by lightly fumigating fortnightly. The compounds that are sold for this purpose are quite harmless to even the smallest plant if used according to instructions. Keep the plants as near the glass as possible with safety, and the glass both inside and out perfectly clean, so as to admit all the light available at this time of year. Damp under the stages and the walls three or four times daily, especially in frosty weather, when the pipes are very hot, as it promotes a good growing atmosphere.

CATTLEYAS AND LÆLIAS.—At this time of year *Cattleya Trianae* will be pushing up flower buds, and will require a little more water, but care must be taken not to overwater them, or the flowers will come soft and weak. *C. Percivaliana* will have finished flowering, and will soon commence to make new roots, when the plants should be potted or top-dressed as the case may be. Nearly all the other varieties will still be resting, and will require very little water; just sufficient to keep them from shrivelling. Overwatering and damping is the cause of spot, which if it once gets a start in *Cattleyas* is very seldom cured. Keep the leaves and bulbs clean by sponging with soft soap and warm water. Nothing looks worse than *Cattleyas* or *Lælias* which are infested with scale, when, especially at this time of year, an hour or two each day could be spared for sponging.

HYBRID CATTLEYAS & LÆLIO-CATTLEYAS.—A good many of these will now be pushing up their flower spikes, and the same treatment applies to them as advised for *Cattleya Trianae*. Should any of these hybrids commence growing do not dry them to keep them back, but put them in a warmer house and encourage the young growth, and generally they will flower from both last season's bulb and the new one.

SOPHRONITIS.—These pretty little Orchids will be showing their buds, and require a little more care in watering. They are very effective when suspended from the roof in the flowering house amongst *Cattleyas* and *Odontoglossums*, and are worthy of a place in every collection.

ODONTOGLOSSUMS will require more moisture as the days lengthen and the sun gets more power. Keep all the spikes neatly staked up, and keep a sharp look out for slugs, as they soon make havoc of the spikes.

PLEIONES have finished flowering and will require potting, using a mixture of peat, moss, and a little loam with plenty of crushed crocks. Care must be taken not to over-water them for some time after repotting.

DENDROBIUMS that are opening their buds should be kept near the

glass, to give the flowers every chance of developing properly. Give sufficient water to prevent the bulbs from shrivelling.

BLINDS AND SHADING should be got ready for use towards the end of the month, as the *Cypripediums*, *Phalænopsis*, and *Odontoglossums* are all the better for a little shade on a bright day.

VENTILATION.—Great care must be taken during the coming month, as a sudden fall in the temperature is very harmful to the plants.

TEMPERATURES for the month should be kept as nearly as follows, due regard being taken of the state of the weather :—

Cool house—Night, 50°; day 60°, with sun heat.

Intermediate house—Night, 55°; day, 65°, with sun heat.

Cool *Cypripedium* house—Night, 58°; day, 65° to 70°, with sun heat.

Warm *Cypripedium* house—Night, 65°; day, 75°, with sun heat.

East Indian house—Night, 65°; day, 80°, with sun heat.

Cattleya house—Night, 60°; day, 70°, with sun heat.

CYPRIPEDES FROM BRIDGE HALL, BURY.

A FEW more interesting seedling *Cypripedes* have been sent from the collection of O. O. Wrigley, Esq., Bridge Hall, Bury (gr. Mr. Rogers). *C. × memoria Moensii × Charlesworthii* is a very pretty flower, having a roundish white dorsal sepal, tinged with green at the base, and lined with light purple to about the middle, while the light greenish petals were more or less lined with brown and dotted at the base. The original *Spicerianum* character comes out very clearly. A seedling from *C. × Mons. de Curte* and *C. Argus* has the petals and dorsal sepal regularly blotched with purple brown, the blotches of the former being arranged in lines. It is said to be the best of a batch of many seedlings. *C. × Lceanum giganteum × insigne Sanderæ* is a small seedling flowering for the first time. It is called *C. × Actæus Wrigleyanum*, and is a light-coloured form with good shape and of much promise. *C. Mastersianum × Sallieri* is a richly-coloured flower, and fairly intermediate in shape. The purple lines on the dorsal sepal are almost confluent in the centre, and become somewhat dotted at the margin, while the petals bear numerous dark blotches on their lower halves. *C. Mastersianum × villosum* is also a richly coloured flower, of good shape and highly polished surface. The dorsal sepal is rich brown with a light green margin and apex, while the lip and petals most resemble *C. villosum* except in being nearly horizontal. The same hybrid has been recorded under the name of *C. Masters-villosum*. *C. × Lathamianum × insigne Sanderianum*, which will rank as a form of *C. × Garrett* A. Hobart, is a pretty *insigne*-like flower with well-blotched dorsal sepal. *C. × Sallieri × œnanthum* should be a form of *C. × triumphans*, but the mother is so closely reproduced that we cannot help wondering if the cross was effective.

BRITISH ORCHIDS.

"SOME British Orchids" was the title of an interesting lecture given by Mr. H. Edmonds, B. Sc., at a meeting of the Brighton Natural History and Philosophical Society, held in the Brighton Corporation Art Galleries, Church Street, last week. Orchids, he observed, were widely distributed, being found everywhere except in the polar regions, but they reached their greatest development in the hot, moist atmosphere of tropical forests. Here they were usually found unbidden guests growing on branches or trunks of trees. But although flourishing in such a position they were not parasitic. They did not take their nourishment from their hosts, as was the case with the Dodder and Mistletoe; they were provided with remarkable aërial roots, which, hanging down in the atmosphere, took their nourishment from the gases present and the moisture, which they condensed. The family was a most extensive one. Yet, though so numerous, no specimen appeared so prolific in individuals as to constitute a feature in the landscape. The British Orchids numbered about forty species, distributed among some sixteen or seventeen genera. Of these species, according to the new edition of Arnold's "Flora of Sussex," twenty-eight were found in this country. Some fifteen of these species were described in great detail by Mr. Edmonds, his remarks being illustrated by many lantern slides. At the close of the lecture Mr. G. Morgan conveyed the thanks of the audience to Mr. Edmonds, and observing that in Shropshire, where he formerly lived, he had never found a third of the Orchids that he had discovered in Sussex, asked what determined the growth of the flowers. Mr. Edmonds replied that many of the Orchids seemed to grow upon chalk, while the Bee Orchis and others were to be found only on the northern side of hills—never on the sunny side. There also seemed to be certain heights at which they flourished.—*Journal of Horticulture*.

ORCHIDS AT WISLEY.—The Report of the Council of the Royal Horticultural Society, for 1907, which has just been issued, states that the new garden at Wisley, which was so generously purchased for the Society's use by Sir Thomas Hanbury, V.M.H., K.C.V.O., is gradually being brought into thorough working order. Contributions of Orchids have been presented to the gardens by Sir Trevor Lawrence, Bart., V.M.H., K.C. V.O., Sir Jeremiah Colman, Bart., Major Holford, C.I.E., C.V.O., W. A. Bilney, Esq., J.P., P. Ralli, Esq., F. Wellesley, Esq., J.P., J. S. Moss, Esq., C. A. White, Esq., J. Sparkes, Esq., Messrs. J. Veitch, Messrs. Charlesworth, Messrs. J. W. Moore, and Messrs. George Bunyard. It is hoped that these will form the nucleus of a far larger collection in a few years to come.

R.H.S. ORCHID COMMITTEE.

THE following constitute the Orchid Committee of the Royal Horticultural Society for the current year. New members are indicated thus* :—

FOWLER, J. GURNEY, J.P., Glebe Lands, South Woodford, *Chairman*.

VEITCH, HARRY J., V.M.H., F.L.S., 34, Redcliffe Gardens, S.W.,
Vice-chairman.

COOKSON, NORMAN C., Oakwood, Wylam-on-Tyne, *Vice-chairman*.

SCHRÖDER, BARON, V.M.H., the Dell, Englefield Green, *Vice-chairman*.

O'BRIEN, JAMES, V.M.H., Marian, Harrow-on-the-Hill, *Hon. Sec.*

ALEXANDER, H. G., Westonbirt Gardens, Tetbury.

ASHWORTH, ELIJAH, Harefield Hall, Wilmslow, Cheshire.

BALLANTINE, H., V.M.H., The Dell Gardens, Englefield Green.

BOLTON, W., Wilderspool, Warrington.

BOUND, W. P., Gatton Park Gardens, Reigate.

BOXALL, W., V.M.H., 186, Brook Road, Upper Clapton, N.E.

BRIGGS-BURY, S., Bank House, Accrington.

BROOMAN-WHITE, R., Arddarroch, Garelochhead, N.B.

CHAPMAN, H. J., The Gardens, Oakwood, Wylam-on-Tyne.

CHARLESWORTH, J., Heaton, Bradford.

COBB, W., Normanhurst, Ruser, Horsham.

COLMAN, SIR JEREMIAH, Bart., Gatton Park, Reigate, Surrey.

CRAWSHAY, DE BARRI, Rosefield, Sevenoaks.

*CURTIS, C. H., 2, Adelaide Road, Brentford, Middlesex.

*CYPHER, J., Queen's Road, Cheltenham.

DYE, A., The Gardens, Tring Park, Tring.

*FOSTER, ALFRED, 38, Montagu Gardens, Wallington, Surrey.

HANBURY, F. J., Stainforth House, Upper Clapton.

LITTLE, H., Baronshalt, The Barons, E. Twickenham.

*LOW, STUART H., Bush Hill Park, Enfield.

LUCAS, C. J., Warnham Court, Horsham.

MCBEAN, A. A., Cooksbridge, Sussex.

MOORE, F. W., V.M.H., Botanic Gardens, Glasnevin, Dublin.

MOORE, G. F., Chardwar, Bourton-on-the-Water, Glos.

OGILVIE, F. M., 72, Woodstock Road, Oxford.

POTTER, J. WILSON, Elmwood, Park Hill-road, Croydon.

SANDER, F., V.M.H., St. Albans.

THOMPSON, W., Walton Grange, Stone, Staffs.

THORNE, F. J., The Gardens, Sunningdale Park, Berks.

THWAITES, R. G., 23, Christchurch Road, Streatham, S.W.

TRACY, H. A., Amyand Park Road, Twickenham.

WHITE, W. H., Burford Lodge Gardens, Dorking.

*WILSON, GURNEY, Glenthorne, Haywards Heath.

CHONDROPETALUM FLETCHERI.

THE annexed figure shows a very interesting plant, which was noted at page 291 of our last volume as follows: "A most curious cross was shown to me by Mr. Gott in one of these houses, namely, *Chondrorhyncha Chestertoni* × *Zygopetalum Mackayi*. There were quite a little lot of plants, and they appear, as far as one can judge them at present, to be mostly intermediate. It will be instructive to see how far the *Zygopetalum* will be able to assert its influence in this case. Some of the seedlings ought to flower next year."



Fig. 8. *CHONDROPETALUM FLETCHERI*.

The expected event has taken place, and Messrs. Sander have sent us a photograph of a flower, natural size, with another showing the whole plant, much reduced. These have been combined in one, and are shown in the annexed figure. The plant has passed into the collection of the Rev. J. C. B. Fletcher, Mundham Vicarage, Chichester, who has kindly sent us one of the flowers. The plant has unquestionably the habit of *Zygopetalum Mackayi*,

which Messrs. Sander inform us was the seed parent, and, indeed, the characters of the *Chondrorhyncha* are difficult to trace, in proof of which we have reproduced the photograph of that parent (fig. 9). It cannot, however, be regarded as a "false hybrid," for some influence has clearly been at work, as is proved by the almost total absence of blue from the flower. The general characters of the plant are so well shown in the figure, that further description seems unnecessary, except as to colour. The sepals and petals are green, with more or less confluent brown blotches, while the lip is cream white, except for a tinge of lilac in front of the crest. It is a curious but well-known fact that *Zygopetalum* hybrids, with the exception of those obtained from the closely allied *Colax jugosus*, cannot be very easily distinguished from pure *Zygopetalums*, and in this case there is little besides



Fig. 9. *CHONDRORHYNCHA CHESTERTONI*.

colour to rely upon. We suggest that this hybrid should be again crossed with the *Chondrorhyncha*, and thus give this parent a further opportunity of asserting itself. Neither the habit nor the remarkable fringe of the lip are distinctly represented at present.

Zygopetalum Mackayi is a very remarkable parent, having been crossed with the most diverse genera, but usually producing seedlings like itself, or "false hybrids" as they have been termed. The case has been frequently mentioned in our pages, and an interesting summary has been given by Mr. C. C. Hurst, F.L.S. (*O.R.* xi. pp. 314, 315). This one-sided inheritance, or "Monolepsis," as it has been called, opens out a wide field for research, for the cause is at present a mystery.

ALBINISM AND MENDEL'S "LAWS" OF INHERITANCE.

SOME curious facts were brought before the Scientific Committee of the R.H.S. on November 26th last by Mr. H. J. Chapman, gardener to Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne, which have some bearing on the Mendelian "Laws" of Inheritance. I have several times been urged to summarise the Mendelian hypothesis from an Orchidological standpoint, and the undermentioned facts may serve as the text for a few remarks.

At the meeting in question Mr. Chapman showed "the result of a cross between *Cypripedium insigne* Sanderæ and *C. callosum* Sanderæ having coloured flowers." Both parents are albinos, and are known to breed true from seed when self-fertilised; yet when crossed together the resulting hybrids are coloured, much the same as when the ordinary coloured types of the species are used. The remark applies to over one hundred plants which have now flowered, and it should be added that the cross was made both ways with the same result. He also showed a coloured flower, the result of crossing *C. callosum* Sanderæ and *C. bellatulum* album. Of this cross—again from albino parents—about twenty-five plants had flowered, and all were coloured.

Here we have two distinct combinations between *C. callosum* Sanderæ and another albino parent, both of them showing reversion to coloured forms. But when *C. callosum* Sanderæ was intercrossed with *C. Lawrenceanum* Hyeaenum—another albino, which reproduces itself true from seed when self-fertilised—the resulting hybrid was a true albino, now known under the name of *C. × Maudiaë*. Can any explanation be offered of such erratic behaviour?

Albinism has been claimed as a Mendelian character, but the above evidence requires a different interpretation. The Mendelian hypothesis, as I understand it, assumes that the definite characters or qualities of an organism are inherited through the possession of certain gemmules or character-bearers, which are concerned in the act of reproduction, and by which the specific characters and qualities are handed on *unchanged* to the new generation—hence the term "unit-characters." They have even been compared with atoms in chemistry. Moreover the way these "units" are arranged in the new generation is said to be a mere matter of chance, something governed by the law of averages, like shaking up counters in a bag and drawing them out blind-folded.

No one has yet been able to define a unit character, nor yet to explain how they originate, but their existence is assumed, and attempts have been made to define their properties, as tallness and dwarfness, greenness and yellowness, &c., these opposite characters being linked together in what

are called "Mendelian pairs." One unit of a Mendelian pair is held to be dominant over the other, hence the terms "dominant" and "recessive" characters.

More recently it has been held that the presence and absence of a character may constitute the two halves of a Mendelian pair—thus "purple" and "non-purple"—"presence being dominant over absence, which a friend waggishly remarked reads like something out of 'Alice in Wonderland.'" Even sex has been claimed as a Mendelian character.

Mendel's discovery has been described as of far-reaching importance—indeed it has been tersely put that "the biological problem of the future will be not so much the origin of species as the origin of unit characters." This is elevating Mendelism to the rank of an all-embracing theory of hereditary besides which other questions sink into significance.

But is there not another explanation of the phenomena included under the term Mendelism? Enormous progress has been made in hybridisation since Mendel carried out his original experiments, and every hybridist is familiar with what may be termed the dissociation of specific characters in secondary hybrids. But something far deeper than this is required. We want to know the relationship of Mendelism to the opposing forces of hereditary and evolution—the tendency of organisms to adapt themselves to changing circumstances and the tendency to remain constant. What are the forces which have led to the marvellous complexity of character seen in such an Orchid as *Cynoches Egertonianum* (*O.R.* xv. pp. 337-340, fig. 37)? And what are the successive changes by which this complexity has been reached? A correct answer would embrace a real theory of heredity, but it is one which in my opinion Mendelism is no competent to give.

What is a species? And why does it remain constant during long periods of time? Why does it reproduce itself true, either from seed or otherwise, without those perplexing eccentricities seen in the hybrids and garden races which are so much the subject of Mendelian experiment? Why are "Mendelian characters" not universal? And one more query—if I have not exhausted the printer's stock—Why is it that two species of normal and constant behaviour when breeding pure—or two albinos, for the matter of that—behave so differently and erratically when intercrossed? The answer is that the difference lies in their past history and their relationship to each other.

Species are adaptational forms which have arisen under the influence of natural selection, the individuals of which are capable of handing on their essential characters to their descendents. Though fixed in character, they are not immutable, but are subject to the operations of the same laws that gave them birth. They fluctuate under varying conditions, and if such

conditions are sufficiently prolonged in any direction new or changed forms arise, which themselves become constant if the altered conditions become stable. In the absence of the power to adapt themselves to the changed conditions they must succumb, under the law of the survival of the fittest. That such evolution has brought about the present enormous diversity in the vegetable and animal kingdoms is now almost universally admitted, though great difference of opinion exists as to the nature of the machinery employed.

We have just seen that when two distinct albino parents of fixed character are intercrossed the resulting hybrid is coloured; in other words, it returns to the normal. And when individuals of two different species, whose characters are in a state of stable equilibrium, are successfully mated together, there is a conflict of interests, differing in intensity according to the amount of diversity between the parents. The result is a hybrid, whose characters are in a state of unstable equilibrium, which in many cases is accompanied by retrogression, the characters of the more ancestral, or less highly specialised parent being "dominant." If such a hybrid is successfully self-fertilised, or re-crossed with one of the original parents, these unstable elements may seize the opportunity to re-arrange themselves according to the more stable ancestral pattern, hence we get reversion or dissociation of the hybrid character, and when this occurs the separating elements would naturally re-arrange themselves according to the law of averages.

The claim that sex is a Mendelian character is not remarkable, for sex in the Mendelian sense implies alternative inheritance. But this fails to explain its significance. Sexuality is a division of labour, which has persisted and become universal because of its utility—even to organisms which combine both sexes in the same individual. A flower may have the sexes in close juxtaposition, and yet possess the most elaborate contrivances to prevent self-fertilisation. The very existence of such contrivances shows their utility to the race. Self-fertilisation, like in-and-in breeding, tends to excessive specialisation and degeneracy, which is continually being checked by cross-fertilisation and the conjugation of biparental organisms.

The fact is Mendelism ignores blended inheritance, with all its utility, having no use for it, and it allows no selective influence to its units. It implies a mere re-shuffling of existing characters according to nothing in particular and without reference to progressive development. It may account for the peculiar behaviour of the elements with which it deals, but as an adequate theory of heredity it fails completely. Its elements are phases of degeneracy. The organisms which best display Mendelian phenomena are the degenerate and unfit, the wastrels of their race—organisms which would not have been perpetuated under the bracing influence of natural selection.

Heredity is an epitome of the phases through which an organism has passed. Fluctuations and variations are the materials upon which it works, and natural selection the controlling force. Fluctuations and variations, unless retrogressive (*i.e.*, mutations), are due to the plasticity of organisms under the influence of changing conditions. Thus indiscriminate variation is constantly controlled by natural selection, so long as that force can operate, and its cessation under human agency leads to all manner of remarkable developments, which are preserved because they minister to our wants or captivate our fancy. Albinism comes under the latter category, but we have seen that crossing, with the opportunity of escape from a too specialised existence which the blending of diverse elements affords, led to a return to the normal. The reversions mentioned at the beginning of this paper should now be self-fertilised, to see whether they break up according to the Mendelian formula. A proportion in the offspring of three coloured to one albino would, I suppose, lead to the explanation that colour was "dominant" and albinism "recessive," but albinism was present in both parents, and if it is recessive colour should not have returned at all.

These remarks are devoted solely to Mendelism as a law of heredity, not to its utility to the breeder. Mr. Cookson failed to get the desired albino hybrid by crossing albino forms of the two species. Whether he would now succeed by self-fertilising the coloured hybrids with albino ancestry I cannot say, but the possibility of it might not have occurred to him without a knowledge of the phenomena of dissociation. The experiment should be well worth trying, and should add something to our knowledge of a very intricate subject.

R. A. ROLFE.

SELF-COLOURED PHOTOGRAPHY.

THE afternoon lecture at the Royal Horticultural Society's meeting held on January 28th was given by Mr. T. Ernest Waltham, and was entitled "Self-coloured Photography of Switzerland and the Swiss Flora," and illustrated by some new and combined processes of his own invention for obtaining photographs in purely natural colours. The slides indicated by the title of the lecture were preceded by a number of others illustrating a beautiful series of life-like floral photographs in natural colours, including a few Orchids—Cattleyas, Dendrobiums, &c. The lecturer was unable to give details of his method of working, owing to impending patents, but it was understood that the process is not altogether automatic, the pictures being finally touched up by hand. The result, however, is very beautiful, and vastly superior to photographs in monochrome. We shall no doubt hear more of this process in the not far distant future.

ORCHIDS IN SEASON.

A VERY beautiful form of *Cattleya Trianæ* is sent from the collection of Mrs. Fielden, Grimston Park, Tadcaster, by Mr. G. P. Bound, who remarks that it is the first time it has flowered. It is of excellent shape, with very broad, short petals, and the colour white with a faint tinge of lilac, and the front lobe of the lip bright lilac in front of the yellow disc. It belongs to the *C. Trianæ delicata* type.

Two interesting flowers are sent from the collection of R. le Doux, Esq., Marlfield, West Derby, Liverpool, by Mr. Davenport. The first was purchased as *Cattleya Trianæ alba*, but a flush of pale lilac in the sepals and petals, and a still more decided one on the front of the lip, shows that it must be placed with *C. Trianæ delicata*. The spike produced three flowers, which have been expanded nearly four weeks. The other is a seedling *Cypripede* whose parentage has unfortunately been lost, but it is almost exactly intermediate between *C. insigne* and *C. exul*, and we believe is a hybrid between them. The dorsal sepal is narrower than in the former, with the basal green half very sharply defined, and on it occur about two dozen large roundish dark brown spots.

An interesting hybrid *Cypripede*, is sent from the collection of Mrs. Ross, Poggio Gherardo, Florence. It is a hybrid between *C. × Sallieri* and *C. hirsutissimum*, and most resembles the latter in size and shape, and the former in colour, though the petals are lilac at the apex. It will be a form of *C. × Erato*.



ORCHIDS FROM GHENT.—Three interesting and beautiful Orchids were recently sent from the collection of the Marquis de Wavrin, Chateau de Ronsele, Ghent, two of which were noted last month, but we regret that there was a mistake respecting their origin. The Marquis writes that the form of *Cattleya × Imperator* noted at page 32 was not a natural hybrid, but the product of a cross between *C. labiata Lindeni*, a very large dark variety, ♀, and *C. granulosa Buyssoniana* ♂. It agrees well with the natural hybrid of the two species. *Lælia × Adrienne* (p. 31) was obtained by crossing *Lælia Jongheana* with the pollen of *L. præstans*, so that this plant cannot yet claim a place in the ranks of natural hybrids. The third is a fine dark form of *Lælio-cattleya Gottoiana*, raised at Ronsele from a very dark *Lælia tenebrosa* and *C. Warneri moortebeekiensis*, which the Marquis says was purchased some years ago, and is the darkest he has ever seen. The seedling is still small, and should develop into a very fine thing, as the shape is good, and the colour very rich. It once more proves the parentage of a natural hybrid, whose origin was long a complete mystery.

NOTES.

A meeting of the R.H.S. will be held at the Royal Horticultural Hall, Vincent Square, Westminster, on February 11th, when the Orchid Committee will meet at the usual hour, 12 o'clock noon. It is also the date of the Annual General Meeting. The following meeting is on March 3rd.

The Manchester and North of England Orchid Society will hold meetings at the Coal Exchange, Manchester, on February 6th and 20th. The Committee meets at noon, and the exhibits are open to inspection from 1 to 3 p.m.

THE FOG FIEND.—Fogs were severe and prolonged in the London district during the early part of January, and Orchids suffered in consequence. The flowers of *Calanthe* × *Veitchii*, *Lælia anceps*, and *Phalænopsis Schilleriana* shrivelled up as if scorched, while the unopened buds of the latter also dropped off. Other Orchids suffered to an equal or less degree. *Cypripedes*, as usual, came off best, and there can be no doubt that they have fairly earned the title of fog-resisting Orchids. Unfortunately little can be done to mitigate the severity of an attack of this kind.

CUT FLOWERS IN WATER.—Immerse the lower ends of the stems in water, and with a sharp thin knife cut off about half an inch of each stem. The cut must be made *under* water. The stems may then be transferred to a vase or laid aside for a short time out of water, but if the cut ends get dry the operation must be repeated. With long lasting flowers the operation may be repeated with advantage at intervals, *e.g.*, once a week with *Cypripedium tonsum*, which lasted three months. This method is serviceable with all flowers that I have tried, but it seems to have more effect on some than on others. I learned the method in Professor I. Bayley Balfour's class of Practical Botany, at Edinburgh.

MILES JOHNSTON.

High Lea, Bideford, Devon.

ORCHID CULTURE is a curious subject. There are such a vast number of unknown quantities in it. I have noticed in other subjects that a beginner can sometimes help other beginners on some points, when they are unable to get much aid from an expert's teaching. I suppose it is largely because a brother beginner can still see the difficulties which the expert has lost sight of, as for him they have ceased to exist.—A BEGINNER.

[Perhaps these unknown quantities add a piquancy to the subject which is sometimes wanting from the culture of more prosaic plants.—ED.]

ORCHID PORTRAITS.

CALANTHE $\times$ VEITCHII (group).—*Gard. Mag.*, 1908, pp. 49, 50, with fig.

CYPRIPEDIUM FAIRRIEANUM VAR. BLACK PRINCE.—*Garden*, 1908, i. p. 16, with fig.

CYPRIPEDIUM INSIGNE.—*Garden*, 1908, i. p. 40, with fig.

CYPRIPEDIUM $\times$ MOONBEAM.—*Journ. Hort.*, 1908, i. p. 27, with fig.; *Gard. Mag.*, 1908, p. 15, with fig.

CYPRIPEDIUM $\times$ SULTAN.—*Journ. Hort.*, 1908, i. p. 99, with fig.; *Gard. Mag.*, 1908, pp. 68, 70, with fig.

CYPRIPEDIUM $\times$ VENUS.—*Journ. Hort.*, 1908, i. p. 75, with fig.

LÆLIO-CATTLEYA FASCINATOR.—*Journ. Hort.*, 1908, i. p. 51, with fig.

ODONTIODA CRAVENIANA.—*Gard. Mag.*, 1908, p. 25, with fig.

ODONTOGLOSSUM $\times$ BINGELIANUM.—*Gard. Mag.*, 1908, pp. 69, 70, with fig.

ODONTOGLOSSUM CRISPUM (specimen plant).—*Gard. Chron.*, 1908, i. p. 4, fig. 2.^a VAR. MEMORIA BATTLE OF WATERLOO.—*l. c.* p. 18, fig. 13.

ODONTOGLOSSUM $\times$ MACNABIANUM.—*Gard. Mag.* 1908, pp. 56, 57, with fig.; *Gard Chron.*, 1908, i. p. 45, fig. 23.

SOPHROCATTLEYA EXIMIA, FOWLER'S VAR.—*Journ. Hort.*, 1908, i. p. 3, with fig.

STANHOPEA OCULATA.—*Gard. Chron.* 1908, i. p. 19, fig. 14.

ANSWERS TO CORRESPONDENTS.

[Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An ADDRESSED postcard must be sent if a reply by post is desired (abroad, reply postcards should be used). Subjects of special interest will be dealt with in the body of the work].

J. W. The named varieties of *Cypripedium insigne* we should think run into the hundreds, but there is no means of ascertaining what many of them are. The list of Mr. R. H. Measures enumerates about 140 of them, and there are many others. We should say that the names are more numerous than the distinct varieties.

S.D. The true *Cattleya Trianae* alba has no trace of colour except the yellow on the disc. It is otherwise pure white.

Portraits received, with thanks. C.M., E.C.

G. H. Possibly the spot arose through drip from the roof during the cold weather.

H. M. Those minute punctures are caused by thrip, which get down into the young growths. As the leaves grow out the spots reveal themselves as black dots. Occasional fumigations should be given to keep them in check.

ERRATUM.

The natural hybrid from the collection of Max Isaac, Esq., described at page 29 under the name of *Lælio-cattleya Isaacsii* should have read *L.-c. Isaacii*. The mistake arose through misreading the name.

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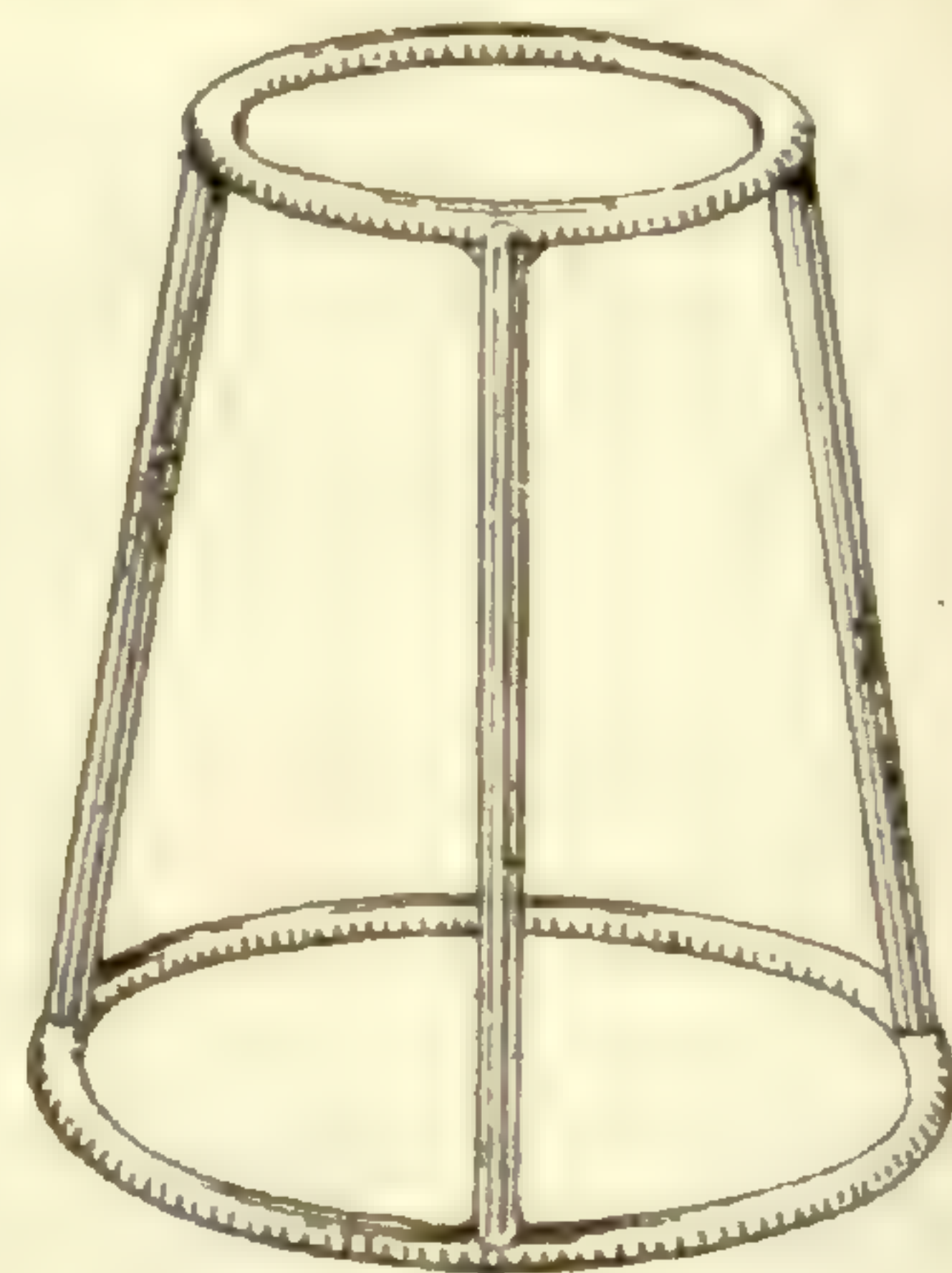
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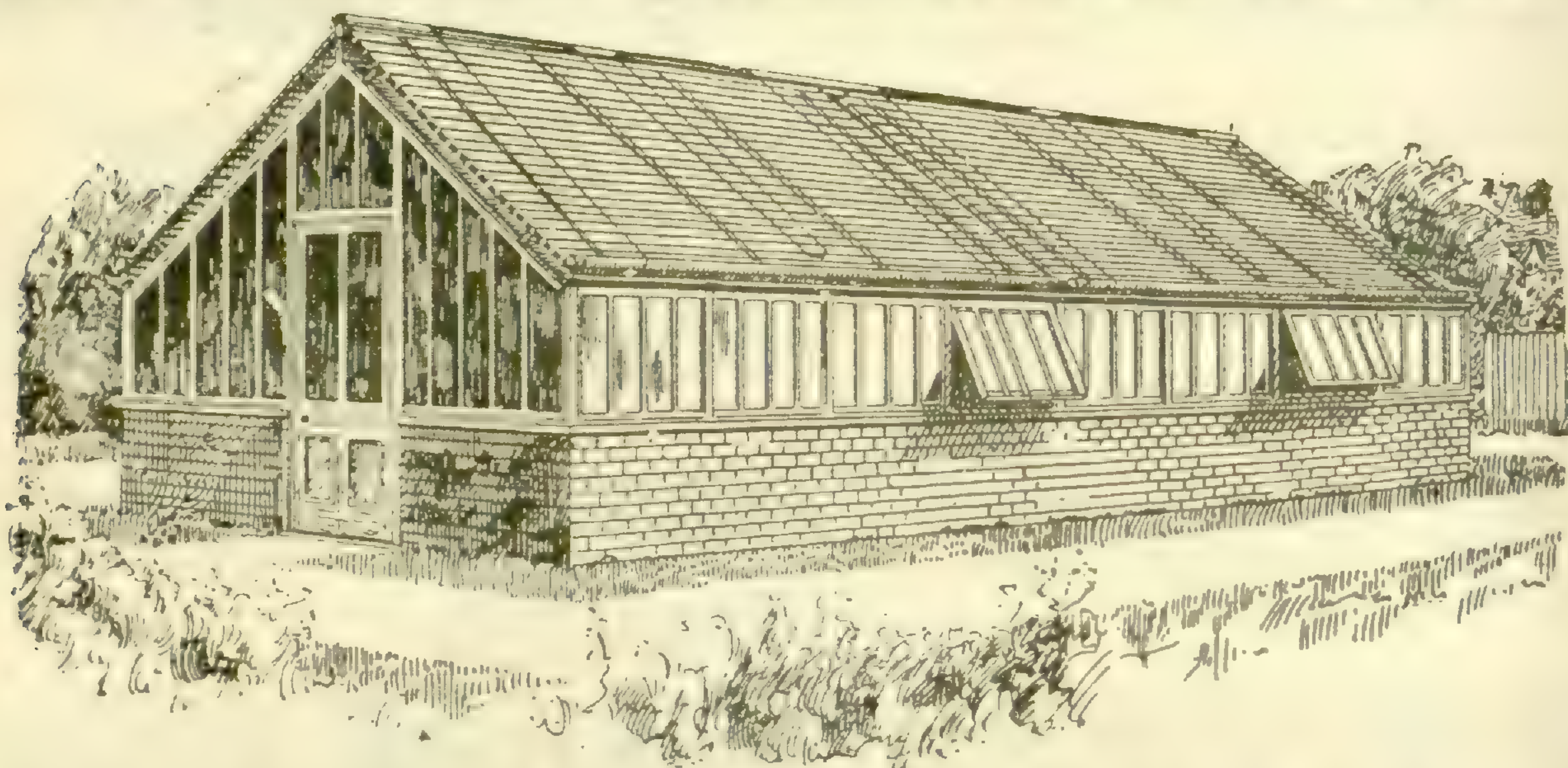
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VOL. XVI.]

MARCH, 1908.

[No. 183.]

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ORCHID REVIEW:
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Contents.

	PAGE		PAGE
Angulocaste Bievreana	92	Generic hybrids list of	82
Answers to Correspondents	96	Notes	94
Calendar of Operations for March	83	Orchid Portraits	96
Cattleya × Fabia var. Vigeriana (fig. 16)	89	Orchids at Kew	87
Dendrobium delicatum	88	Orchids in season	93
Dendrobiums	66	Orchids: their structure, development and fertilisation	90
D. atrovioleaceum (fig. 12)	69	Paphiopedilum × Harrisianum abnormal	87
D. Bensonæ (fig. 11)	68	Societies	71
D. linguiforme (fig. 13)	70	Manchester and North of England	
D. nobile (fig. 10)	67	Orchid	76
Diacattleya Colmanæ (fig. 14)	80	Royal Horticultural	71
Diacrium bicornutum (fig. 15)	81		
Dies Orchidiani	65		

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THE ORCHID REVIEW.

VOL. XVI.]

MARCH, 1908.

[No. 183.

DIES ORCHIDIANI.

THE question of hybridising with stored pollen, which is raised by Dr. Otto N. Witt, at page 35, is certainly interesting, and I hope that his suggestion that those hybridists who have made experiments will give us the benefit of their experience will bear fruit. I can quite understand that pollen which has been kept until dried up would be useless, and even if not dried up its vitality might be impaired by keeping, but I do not quite see why if it retained its vitality sufficiently to produce pollen tubes, and fertilise the ovules, that the resulting plants should be unhealthy. If the pollen, after storage, is able to progress to this stage all doubt about its vitality should be at an end.

I know that experiments have been made, for some years ago one of our hybridists showed me quite a sheaf of quills, in a drawer of his study, each containing pollen, sealed up, and with a small label attached, and with these he hoped to make several, as he thought, very important crosses. I met him some months afterwards and enquired how the matter was progressing. He shook his head. "No good," he remarked, "the pollen all dries up, and you might as well put little bits of stick on the stigma." I conclude that that was the end of the matter, so far as he was concerned, but I think it can scarcely be as hopeless as that. If one could only lengthen the period of the pollen's vitality by a few weeks, it might be possible to effect certain crosses which would otherwise be difficult. I had just read an article on retarding Lily of the Valley, when I came across Dr. Witt's article, and tried to connect the two together. I should not recommend freezing Orchid pollen, which I fancy would settle its vitality once and for all, but it might be possible to lengthen its life by cutting the flowers as soon as they open, and placing them in a cool cellar, changing the water occasionally. Pollen in sealed tubes or in paper might also keep better in such a place than in an ordinary room. Hitherto most of this kind of work has been done by getting the pollen parents to produce occasional flowers out of season, but there may be something in the other method.

The account of the behaviour of *Paphiopedilum* pollen is very interesting, and I do not remember anything quite like it before, though its consistency and the dry nature of the stigma were well known—in fact a hybridist of my acquaintance tried to hybridise one with *Cattleya* pollen, and as it would not adhere to the stigma he was ingenious enough to borrow some of the viscus from the *Cattleya* for the purpose. I rather think, however, that the cross was not successful.

There are numerous unsolved problems among Orchids, and the figure of *Chondropetalum Fletcheri* given at page 56 illustrates one of them. I don't think anyone could call the plant *Zygopetalum Mackayi*, pure and simple—certainly not as regards colour—but on glancing at the figure of the pollen parent on the opposite page one can only wonder what has happened. The concluding phrase, “a mystery,” is certainly applicable.

I have, however, an idea on the subject. The *Zygopetalum* character appears to have been “dominant,” and the *Chondropetalum* “recessive,” so the thing will now be to fertilise the hybrid with its own pollen, so as to extract the recessives, *à la Mendel*. There are several very marked characters about the *Chondrorhyncha* parent, and some of them certainly ought to return if self-fertilised seedlings could be obtained. Once upon a time I should have recommended that the hybrid be again crossed with *Chondrorhyncha* pollen, but now let us have an experiment on strict Mendelian lines, and give the *Chondrorhyncha* “unit characters” a chance.

ARGUS.

DENDROBIUMS.

(Concluded from page 27.)

THE deciduous species of the genus *Dendrobium*, with the numerous hybrids derived from them, furnish a group of highly decorative garden plants. First and foremost among them should be mentioned the beautiful *D. nobile*, which has been a very popular garden plant ever since its original introduction in 1837. It presents a remarkable series of varieties, from the pure white *virginale*, to the large and richly-coloured *nobilis*, which has been known ever since 1878, but still ranks as one of the best, though among the large importations made during the last ten or twelve years are some which rival it in size and richness of colouring. Then there are the varieties *Ballianum* and *murrhiniacum*, in which the usual dark maroon blotch is replaced by one of a light rosy shade, *Cooksonianum*, in which a disc-like blotch appears on the petals, and *burfordiense*, in which similar blotches occur at the base of the lateral sepals. An account of the principal varieties was given at pp. 147-150 of our third volume.

D. NOBILE is very easily grown into large specimen plants, and one such is shown in the annexed illustration (fig. 10), which was grown in the collection of Mrs. G. Knowles, Hollin Hall, near Bradford, by Mr. Moorby. It is a noble specimen, grown in a 14-inch basket, and bears over 1,100 flowers. The longest stems measure $4\frac{1}{2}$ feet high, and a noticeable feature of this plant is that the foliage of the previous year's growth is well preserved,



FIG. 10. *DENDROBIUM NOBILE* (specimen plant).

which greatly enhances the appearance of the specimen. This is attributed to the method of treatment, no severe rest being given. When the growths are mature water is gradually withheld, but the stems are never allowed to shrivel. The plant was grown with others in a house devoted chiefly to tomatoes, and was top-dressed annually with fresh peat and sphagnum. Five years before it was a starved specimen in an eight-inch pot, with stems

ten inches high. It is a very fine example of good culture. The species is very accommodating, and is often grown remarkably well in an ordinary stove or cucumber house, and rested in a vinery. It is invaluable for cutting, and lasts a long time in water if the stems can be cut with the flowers attached.

D. BENSONÆ (fig. 11) is another very handsome species, having creamy white flowers with a yellow disc to the lip, on which usually occur two maroon eye-like blotches. It is a dwarfer plant than the preceding, and equally floriferous, though it often has the reputation of being difficult to grow, which is evidently the result of unsuitable treatment, for Mr. James Cypher once remarked :—" I have grown it for eight years, and at the end



Fig. 11. *DENDROBIUM BENSONÆ*.

of that period had finer bulbs than those imported. I believe that many, or nearly all, are lost by having too much water during winter or early spring, and even when the new growths are several inches high they should receive very little water." It is particularly liable to the attacks of red spider, which, however, can be kept in check by sponging with the usual insecticides. It is a Burmese species, and was originally discovered by Colonel Benson, and introduced by Messrs. James Veitch & Sons in 1866. The locality was given as mountains near Tongou, west of Prome, at an altitude of about 1,500 feet, whence it extends southwards as far as the latitude of Moulmein. The late Major-General Berkeley stated that the form found in the Kareen hills, not far from Shoaghyn, is immensely superior to the Arracan form. The

plant figured was grown in the collection of the late R. I. Measures, Esq. *D. Bensonæ* has been successfully hybridised with *D. nobile*, *D. moniliforme*, *D. Maccarthiæ*, and *D. × Cassiope*, giving a group of very pretty little hybrids.

D. ATROVIOLACEUM (fig. 12) is a plant of a totally different type. It is one of a group of several species found in New Guinea and the adjacent islands, of which the mossy-pedicelled *D. macrophyllum* is one of the earliest and best known. The leaves are usually two or three in number, and occur at the summit of the stem, from which point the inflorescence is



Fig. 12. DENDROBIUM ATROVIOLACEUM.

produced. *D. atrovioleaceum* was introduced by Messrs. James Veitch & Sons, and flowered for the first time in Europe in 1890. It is easily distinguished from *D. macrophyllum* by the absence of pubescence from the pedicels. The sepals and petals are cream yellow, with numerous dusky brown spots, and the strongly three-lobed lip is deep violet purple, with some dull green markings outside. The flowers have a peculiar pendulous character, so that the richly-coloured lip is best seen from underneath. The New Guinea species should not be rested in a cool temperature, like

their deciduous allies, but require warm treatment throughout the year. The evergreen species should not be so severely dried off, but should receive sufficient moisture to prevent the foliage from suffering. The whole of the New Guinea species require pretty similar treatment.

D. LINGUIFORME (fig. 13) represents a plant of such a totally different character that the uninitiated would not recognise it as a *Dendrobium* at all. And its peculiar leaves might very well be taken for pseudobulbs. It belongs to the small section *Rhizobium*, and is a native of Queensland and New South Wales. It was originally described over a century ago by Swartz, and was introduced to cultivation about the year 1860, by Mr. Hill, of the Brisbane Botanic Garden, who sent living plants to Kew, where they soon flowered, and the species was figured in the *Botanical Magazine*



Fig. 13. *DENDROBIUM LINGUIFORME*.

(t. 5249). The present figure is from a plant which flowered in the collection some time ago. It succeeds well in a small basket suspended from the roof, and flowers annually. The creeping rhizomes are woody, and on them are produced alternately the elliptical-oblong, very fleshy leaves, in reference to which the name was given. The flowers are borne in slender axillary racemes, and have very narrow pure white segments, with a few pink spots on the lip, and a little yellow on the disc. *D. cucumerinum*, Lindl., is a closely allied species, which took its name from the resemblance its leaves bear to little cucumbers. It is figured at t. 4619 of the *Botanical Magazine*. *D. teretifolium*, R. Br., is another nearly allied plant, though its long pendulous, whip-like leaves give it a very different appearance.

SOCIETIES.

ROYAL HORTICULTURAL.

A MEETING of this Society was held at the Royal Horticultural Hall, Vincent Square, Westminster, on January 28th last, when there was a very good display of Orchids, and the awards consisted of nine Medals and three Awards of Merit.

F. Menteth Ogilvie, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), staged a choice group of finely-grown *Cypripediums*, including four fine forms of *C. × Euryades*, one of which bore as many as thirteen flowers, three good *C. insigne Sanderianum*, the best with seven flowers, a fine *C. × Mons. de Curte*, and others. Such culture shows the plants at their best, and the group was deservedly awarded a Silver Flora Medal.

Sir Jeremiah Colman, Bart., Gatton Park, Reigate (gr. Mr. Bound), received an Award of Merit for *Cymbidium × gattonense* (*Lowianum × Tracyanum*), a remarkably fine hybrid, most resembling the latter parent in size and colour. The sepals and petals are yellowish-green, closely lined with purple, and the lip cream white spotted with red, with the disc very hairy, as in the seed parent.

Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. Chapman), received an Award of Merit for *Cypripedium Fairrieanum*, Cookson's variety, a remarkable form, having the dorsal sepal suffused with blackish purple, except at the base, and the colour equally dark on the back.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), received an Award of Merit for *Cypripedium × F. Sander*, a handsome hybrid of doubtful origin. The flower is of fine shape, with the broad dorsal sepal green at the base, heavily blotched with chocolate brown, and white near the apex with some purple spots, and the petals and lip honey yellow, tinged and veined with brown. He also sent a fine *C. × triumphans*, and *C. × Rajah* (*Io grande × Swinburnei magnificum*), a large and richly-coloured hybrid, having heavily blotched petals.

Major G. L. Holford, C.I.E., C.V.O. (gr. Mr. Alexander), sent *Læliocattleya Goldfinch* (*L.-c. warnhamensis × C. Dowiana aurea*), bearing deep yellow flowers showing much of the *Dowiana* veining in the lip, *Cattleya × Cyril* (*Harrisoniana × Percivaliana*), a well-shaped purple flower with a rich yellow disc to the lip, *Cypripedium × Bianca* (*Prospero × insigne Sanderæ*), most like a light coloured *C. × LEEANUM*, and *C. × Merlin* (*insigne × illustre*), a handsome thing, having a large white dorsal sepal, with a few dark purple spots at the yellow base, and the lip and petals yellow, suffused with red brown.

Messrs. Armstrong & Brown, Tunbridge Wells, staged a bright and

attractive group, which gained a Silver Flora Medal. It contained examples of *Odontoglossum crispum* and *O. Pescatorei*, the brilliant *Sophronitis grandiflora*, *Masdevallia caudata* and *Schröderiana*, *Bulbophyllum Dearii*, *Cymbidium* × *Woodhamsianum* (*Lowianum* × *eburneo-Lowianum*), some good forms of *Cypripedium insigne*, *C. Fairrieanum*, and various others. A particularly interesting feature was a series of the pretty little hybrid called *C. × Helen II.* (*insigne* × *bellatulum*). Besides examples of the typical form, there was the variety *Armstrongiæ*, obtained from the albino forms *C. × insigne Sanderæ* × *bellatulum album*, and having cream white flowers dotted with purple, and another form, obtained from *C. insigne Chantini* × *bellatulum album*.

Messrs. Charlesworth & Co., Heaton, Bradford, received a Silver Flora Medal for a fine group, containing some good *Lælia anceps*, some brilliant examples of *Cattleya* × *Octave Doin*, *C. × Enid*, a beautiful series of *Lælio-cattleya Andromeda*, the richly coloured L.-c. *Golden Oriole*, the result of re-crossing L.-c. *Charlesworthii* with *C. Dowiana aurea*, one of its original parents, L.-c. *Prospero*, &c., with a few good *Odontoglossums*, hybrids and forms of *O. crispum*. One of the latter bore a compact panicle with five branches, and a number of light rosy flowers of very good shape, quite an exception to most of the paniculate forms of the species.

Messrs. Cypher & Sons, Cheltenham, received a Silver Flora Medal for a fine group, consisting largely of *Cypripediums*, with some good *Calanthe* × *Veitchii*, *Cattleya Trianæ*, *Lælia anceps*, *Zygopetalum rostratum*, *Lycaste Skinneri*, *Vanda Amesiana*, *Masdevallia torta*, *M. × McVittiae*, *M. × Hincksiana*, and *Catasetum macrocarpum*, with two fine specimens of *Cymbidium* × *Winnianum* in the centre, one bearing as many as sixteen racemes. The *Cypripediums* included some good *C. insigne*, *C. × LEEANUM*, *C. × aureum*, *C. × Euryades*, the handsome *C. × George Moore*, *C. × Mrs. Bostock*, a fine flower approaching *C. villosum giganteum*, with some spotting on the dorsal sepal, and a white margin, &c.

Messrs. J. & A. A. MacBean, Cooksbridge, received a Silver Flora Medal for a particularly fine group, including many well-grown examples of *Odontoglossum crispum*, and white forms of *Lælia anceps*, the latter including several of *L. a. Sanderiana* and *L. a. Schröderiana*, intermixed with many plants of the brilliant *Epiphronitis Veitchii*.

Messrs. Heath & Sons, Cheltenham, received a Silver Banksian Medal for an interesting group, containing three well-flowered examples of *Cattleya Percivaliana*, the pretty little *Sophrocattleya Heathii*, *Cypripedium Charlesworthii*, some good *C. × LEEANUM giganteum*, *C. × Mrs. F. Hardy*, and the handsome *C. × Aureole* (*Lathamianum giganteum* × *Boxallii*), having a densely-blotched dorsal sepal margined with white; also hybrids between *C. concolor* and *tonsum*, and *C. Chamberlainianum* and *concolor*.

Messrs. Hugh Low & Co., Enfield, received a Silver Banksian Medal for a fine group, including some good *Cattleya Percivaliana* and *Trianae*, four plants of *Lælia Gouldiana*, *Platyclinis glumacea*, *Odontoglossum blandum*, *O. Rossii*, *O. bictoniense*, *Arpophyllum spicatum*, *Cymbidium* × *Wiganianum*, *Oncidium ornithorhynchum*, *Cypripedium* × *Swinburnei magnificum*, *C.* × *Thompsonianum*, good varieties of *C.* × *aureum*, &c.

Messrs. J. W. Moore, Ltd., Rawdon, Leeds, received a Silver Banksian Medal for a group of good things, including some fine forms of *Cypripedium* × *aureum*, *C.* × *Ville de Paris*, a very fine *C.* × *Charlesianum*, a hybrid between *C. insigne* and *C. exul*, called *C.* × *Hecla II.*, a pretty hybrid between *C.* × *Leeanum Albertianum* and *C. insigne Chantinii*, *Maxillare porphyrostele*, *Bulbophyllum comosum*, *Lycaste Skinneri*, and some good *Odontoglossums*, a hybrid from *O.* × *Wilckeanum* × *ardentissimum*, having one large red-purple blotch on each segment, being effective.

Messrs. James Veitch & Sons, Chelsea, received a Silver Banksian Medal for a very choice group, containing a beautiful series of *Cypripedium* × *Countess of Carnarvon*, obtained by crossing *C. villosum* and *C.* × *Euryades*, and showing a wide range of variation, *C.* × *Winnianum*, *C.* × *Lathamianum*, *C.* × *Miss Louise Fowler*, the pretty *Epidendrum Endresii*, some good examples of the handsome *Tricopilia suavis*, *Brassocattleya Orpheus*, *Neobenthamia gracilis*, *Odontoglossum Pescatorei*, &c.

Messrs. Linden, Brussels, sent three good seedling forms of *Cypripedium insigne*, and four handsome *Odontoglossums*. *O. crispum* Jean Linden is a handsomely-blotched seedling raised in the establishment, *O.* × *exultans* (*crispum* × *excellens*), a bright yellow flower blotched with red-brown, and *O.* × *Notteanum* (*loochristiense* × *Wilckeanum*), a fine form having white flowers margined with yellow, and handsomely blotched. The other was apparently a form of *O.* × *Fascinator*.

At the meeting held on February 11th there was a brilliant display of Orchids, and the awards consisted of ten medals and four Awards of Merit.

J. Bradshaw, Esq., The Grange, Southgate (gr. Mr. Whitelegge), staged a very fine group, to which a Silver-gilt Medal was given. It contained some excellent forms of *Cattleya Trianae*, *C. T. The Premier* and *C. T. Mrs. de Barri Crawshay* being two very richly-coloured forms. *C. T. Diana* is a delicate blush-pink form, and *C. T. Esmeralda* a beautiful white flower with the front of the lip light pink. There was also the chaste *C. T. alba*, with eight flowers, and other good white forms, a fine specimen of the brilliant *Odontioda Bradshawiae*, some good hybrid *Odontoglossums*, *Cymbidium grandiflorum*, and other good *Cymbidiums*, with a very fine lot of *Lycaste Skinneri*. An Award of Merit was given to *L. S. Orion*, having broad blush-white sepals, rosy petals, and a pure white lip.

Baron Sir Henry Schröder, The Dell, Englefield Green (gr. Mr. Ballantine), sent two magnificent specimens of *Odontoglossum coronarium brevifolium*, one with five, the other with four inflorescences. They have been cultivated for many years with great success (Silver Flora Medal).

Sir Jeremiah Colman, Bart., Gatton Park, Reigate (gr. Mr. Bound), staged a beautiful little group of hybrids raised at Gatton, including a series of *Phaiocalanthe Colmanii*, ranging from pink to white in colour, the richly-coloured *Spathoglottis* × *Colmanii*, a good *Odontoglossum* × *Wilckeanum*, and the pretty little *Brassolælia fladosa*. Awards of Merit were given to the two following: *Cymbidium* × *Lady Colman* (*eburneo-Lowianum* × *Tracyanum*) is a very beautiful hybrid, resembling the latter in size, and having light greenish yellow sepals and petals, with fine dotted purple lines, and a white lip blotched with red-purple. *Diacrocattleya Colmaniae* (*Diacrium bicornutum* × *Cattleya intermedia nivea*) is a remarkable generic hybrid, most like the *Diacrium* in habit, and bearing an erect spike of one flower and three buds, the expanded flower being $3\frac{1}{2}$ inches in diameter, and white, with a pale sulphur-coloured lip (See fig. 14).

R. Brooman-White, Esq., Arddarroch, Dumbartonshire, sent a fine lot of cut spikes of *Odontoglossum crispum*, in a series of beautiful varieties, a very fine *O.* × *loochristiense*, and some good *Cattleya Trianae*, *Lælia anceps*, &c.

The Marquis de Wavrin, Chateau de Ronsele, Ghent (gr. M. de Geeste), sent two very beautiful forms of *Cattleya Trianae*, which had, unfortunately, been damaged by fog. The variety *Princess Elizabeth* of Belgium is a very fine white, slightly tinged with lilac, and the front of the lip rose-purple, with only a trace of yellow in the tube.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent *Cypripedium* × *Mrs. William Mostyn* (*villosum* × *Mons de Curte*), having a round white dorsal sepal, handsomely spotted with purple, and the petals and lip yellow, suffused with brown, and *C. Gratrixianum giganteum*, a very large and striking form.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a very fine group, to which a Silver Flora Medal was given. It contained some very fine forms of *Cattleya* × *Empress Frederick* and *C.* × *Octave Doin*, two very richly-coloured forms of *Lælio-cattleya* × *luminosa*, *L.-c. Sylvia* (*L.-c. Phoebe* × *Ascania*), a pretty yellow flower with the front of the lip rose, *Odontoglossum* × *Lambeauianum* var. *Lyoth*, a very fine form, densely blotched with claret colour, good forms of *O.* × *Ossultonii* and *O. Pescatorei*, a particularly good example of *Odontioda Bohnhoffiae* bearing three spikes, *Lycaste* × *Balliæ*, *L. lasioglossa*, good forms of *Cypripedium* × *aureum*, and others. An Award of Merit was given to *Sophrocattleya Antiochus* var. *rubra* (*S.-c. Cleopatra* × *C. Warscewiczii*), a very brilliantly coloured rose-purple flower, with darker veining on the petals, and the lip deep rose-purple.

Messrs. Cypher & Sons, Cheltenham, received a Silver Flora Medal for a very large and effective group, containing, in the centre, many white and coloured *Lælia anceps*, with good *Odontoglossum crispum*, *O. Hallii*, *O. × Adrianæ*, *O. Vuylestekei*, some good *Lycaste Skinneri* and *Cattleya Trianæ*, *Masdevallias*, some good *Brassocattleyas*, *Brassolælia Gipsy*, and a number of good *Cypripediums*, including *C. × aureum*, some good dark *C. Fairrieanum*, *C. × Beekmanii*, *C. × Almos*, *C. × Thompsonianum*, &c.

Messrs. Sander & Sons, St. Albans, received a Silver Flora Medal for a brilliant group, including many good *Cattleya Trianæ*, *Epidendrum Endresii*, and *E. Wallisii*, *Saccolabium bellinum*, *Oncidium Warscewiczii*, the pretty *Vanda Watsoni*, a pan of the pretty *Orchis longibracteata*, a very pretty species whose history was given at page 93 of our fourteenth volume, *Cypripedium × tessellatum porphyreum*, *C. × Thompsonianum*, *C. insigne*, &c.

Messrs. Heath & Sons, Cheltenham, received a Silver Banksian Medal for a good group of *Cattleya Percivaliana*, *Cypripediums*, &c., among the more noteworthy being *C. × Mrs. William Mostyn*, *C. × Mrs. Tautz*, *C. × Swinburnei magnificum*, *C. × Mons. de Curte*, and other good hybrids.

Messrs. Hugh Low & Co., Enfield, received a Silver Banksian Medal for a showy group, containing many pretty forms of *Cattleya Trianæ*, *Cattleya Percivaliana*, one of the latter bearing twenty-six flowers, *Dendrobium nobile virginale*, *Cirrhopetalum ornatissimum*, two good dark *Cypripedium Fairrieanum*, *C. × J. Seymour (callosum × Prewettii)*, two fine examples of *C. × Minos Youngii*, and others.

Messrs. J. W. Moore, Ltd., Rawdon, Leeds, received a Silver Banksian Medal for a good group, consisting largely of *Cypripedes*, and including the fine *C. × Alcibiades superbum*, having very richly-coloured petals and lip, and the large round dorsal sepal white, spotted with purple, some good *C. × Euryades*, *C. Fairrieanum nigrum*, with very broad dark bands on the dorsal sepal, a very dark form of *C. villosum*, and other good things.

Messrs. Stanley & Co., Southgate, received a Silver Banksian Medal for a bright and pretty group, including some good *Cattleya Trianæ*, *Lælia flava*, *Sophronitis grandiflora*, *Cypripedium villosum*, and other good things.

Messrs. J. Veitch & Sons, Chelsea, also received a Silver Banksian Medal for an interesting group, showing a series of the variable *Cypripedium × Countess of Carnarvon*, some of them having the dorsal sepal much spotted as in the *Euryades* parent, some good *Lycaste Skinneri*, *Odontoglossum Pescatorei*, the clear yellow *Dendrobium × Ophir*, *Lælio-cattleya Nysa*, &c., with three fine plants of *Platyclinis glumacea* in the centre.

Messrs. Armstrong & Brown, Tunbridge Wells, sent a very pretty hybrid from *Cattleya Trianæ × Lælio-cattleya Phœbe*, having orange-coloured flowers tinged with rose, and the front of the lip claret-coloured.

M. Mertens, Ghent, sent hybrid *Odontoglossums* and *Cypripediums*.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

A MEETING of this Society was held at the Coal Exchange, Manchester, on Feb. 6th, when the following members of the Committee were present: Messrs. E. Ashworth, Chairman, Cypher, Sander, Ball, Upjohn, Shill, Ashton, Ward, P. Smith, Warburton, Cowan, and R. Ashworth. The *Cypripediums*, which have been such a grand feature at the recent meetings, are now beginning to fall off slightly, and the groups are showing a more varied appearance.

H. J. Bromilow, Esq., Rann Lea, near Liverpool (gr. Mr. Morgan), gained the premier award of the day, the Society's Silver-gilt Medal, for a grand group of *Cypripediums*, relieved with palms, &c. *C. × Hera*, Rann Lea var., *C. × Greenbank*, and *C. × Greenbank* var. *rubens* all gained Awards of Merit. The group also contained many plants which had previously gained awards. I noted *C. × aureum* Surprise, a fine pot of *C. × A. virginale magnificum*, *C. × A. Œdippe*, *C. × Niobe*, *C. × Minos Youngii*, *C. insigne* var., F. W. Ashton, a grand form, &c.

J. McCartney, Esq., Hey House, Bolton (gr. Mr. Holmes), staged a fine group of mixed plants, and gained two medals, Silver for the group, and Bronze for the "Low" Cup. Very striking were some well-flowered (for this district) plants of *Lælia anceps Sanderiana* and *Williamsii*, also several varieties of *Cattleya Trianæ*, *Angræcum sesquipedale* with three flowers, a nice plant of *Phalænopsis Stuartiana*, and *Cymbidium × Holmesii*. A few *Odontos* and *Cypripedes* completed the group.

Mr. J. Robson, Altrincham, staged a small group of *Cypripediums*, in which I noted a good unnamed seedling, from *C. insigne* Harefield Hall var. and *C. × Sir Redvers Buller*?

Messrs. Hugh Low & Co., Enfield, staged a small group of *Cypripediums* of high quality, and were awarded a Bronze Medal.

Messrs. Heath & Son, Cheltenham, showed *Cypripedium × Aureole* (*Lathamianum giganteum × Boxallii atratum*), very fine, *C. × Mrs. Wm. Mostyn*, and several others.

Messrs. Cypher & Sons, Cheltenham, showed a fine group, of their usual high standard, chiefly *Cypripedes*, relieved with *Odontoglossum crispum*, *O. Pescatorei*, and cut flowers of *Cymbidium × Winnianum*. *Cypripedium aureum Hyeaenum* was good, and *C. nitens* var. F. F. Smith, a very bright flower of large size. Others noted were *C. × Queen of Italy*, *C. × Thompsoni*, *C. × Mrs. Wm. Mostyn*, *C. × Geo. Moore*, &c. (Silver Medal).

A. Warburton, Esq., Haslingden (gr. Mr. Dalglish), staged a nice group of *Cypripedes*. *C. × Archimedes* var. *nigrum*, *C. × Marguerite* (*Lathamianum × Spicerianum*), a fine intermediate form, and *C. Fowlerianum* Vine House var., each gained an Award of Merit. I also noted *C. × Maudiaë*, *C. × aureum virginale*, *C. × Leeanum Clinkaberryanum*, &c. (Silver Medal).

E. Rogerson, Esq., Oakdene, Didsbury (gr. Mr. Price), staged a small group of good quality. *Cypripedium* × *Brilliant*, Oakdene var., was given an Award of Merit. I noted also a fine *C.* × *aureum* *Surprise*, *C.* × *Wottoni*, *C.* × *Zeus*, Oakdene var., *Miltonia* × *Bleuana*, a fine *Cattleya* *Trianae* *alba*, &c.

S. Gratrix, Esq., Whalley Range (gr. Mr. Shill), gained an Award of Merit for *Cypripedium* × *Stepmanii*.

J. H. Craven, Esq., Keighley (gr. Mr. Corney), showed *Cypripedium* × *Eury-nitens* (Award of Merit), a very fine flower.

Messrs. Sander & Sons, St. Albans, showed a small group of *Odontos* and *Cypripedes* of good quality. I noted a nice hybrid *Cypripede*, much after the style of *C.* × *aureum*.

Messrs. Moore & Co., Rawdon, Leeds, showed a splendidly-flowered plant of the rare *Lycaste macrophylla* var. *Measuresiana*, bearing 22 flowers and buds (Award of Merit and Cultural Certificate), also several varieties of *Cypripedium* *Hecla* II., *Dendrobium speciosum*, &c.

G. W. Jessop, Esq., Cliff Cottage, Rawdon, showed the quaint *Bulbophyllum comosum* and *Cirrhopetalum picturatum*.

Messrs. Keeling & Sons, Bradford, staged a small group of mixed plants, which received a Vote of Thanks.

G. Shorland Ball, Esq., Burton, Westmoreland (gr. Mr. Herdman), staged a good group of fine *Cypripediums*. *C.* *Spiceroni*, *C.* × *Veronicus*, *C.* × *Alcibiades*, G. S. Ball's var., *C.* × *Sallie* (*Sallieri aureum* × *Leeanum virginale*), and *C.* × *Miss Louisa Fowler*, G. S. Ball's var., all received Awards of Merit. I also noted *C.* × *George Singer*, a very fine *C.* × *chrysotoxum*, *C.* × *aureum* *Surprise*, *C.* × *Mrs. Wm. Mostyn*, and the beautiful little *Cœlogyne sparsa*, carrying two spikes of its white and orange-red flowers (Silver Medal).

Mr. W. Shackleton, Bradford, staged a nice group of mixed plants, chiefly *Odontoglossums* and *Cypripediums*, in which I noted a good *C.* × *aureum* *Hyeaenum* and *C.* *insigne maculatum nigrum* (Bronze Medal).

D. O. Drewett, Esq., Riding Mill-on-Tyne (gr. Mr. Rehwick), sent a group of *Cypripediums* of excellent quality. *C.* *insigne* *Grand Monarch*, *C.* *i.* *Procyon*, and *C.* × *Leeanum Purity*, Drewett's var., all gained Awards of Merit. Other choice things were *C.* × *Amy Moore*, *C.* × *aureum* *Surprise*, *C.* × *a.* *Ædippe*, *C.* × *Leeanum New Hall Hey* var., *C.* × *L. Lavertonianum*, &c.

Mr. W. Bolton, Orchid grower, Warrington, sent *Cypripedium* *insigne* *Sanderianum*, *C.* × *Thompsoni*, *C.* × *aureum* *Hyeaenum*, *C.* × *a.* *Ædippe*, and others, making a nice group.

At the meeting held on February 20th, the following members of the Committee were present: Messrs. E. Ashworth, Chairman; H. H. Smith,

Warburton, Cowan, Upjohn, Sander, Ball, Ashton, Keeling, Shill, Cypher, Ward, Parker, R. Ashworth and P. Smith. The winter-flowering *Cypripedes* showed a further falling off, *Odontoglossums*, *Dendrobes*, *Cattleyas*, &c., being well to the fore.

R. Farrer, Esq., Ingleboro', Yorks (gr. Mr. Sheppard), gained a First-class Certificate for *Odontoglossum crispum ardentissimum*, a remarkable flower of fine shape and substance, with a large blotch on each segment, also a hybrid between *O.* $\times$ *percultum Charlesworthii* and *O. crispum Calypso*.

H. J. Bromilow, Esq., Rann Lea, Liverpool (gr. Mr. Morgan), staged a group of *Cypripediums* of high quality. *C. Fairrieanum* var. *Othello* was given an Award of Merit. The flower was rather small, but very distinct, the upper three-fourths of the dorsal sepal being of an intensely dark maroon, almost black, and the petals broadly edged with the same dark colour. The group contained many well-flowered plants, and gained the Society's Silver Medal.

S. Gratrix, Esq., Whalley Range (gr. Mr. Shill), showed *Cypripedium* $\times$ *aureum*? var. *laekenense*, a very fine flower and well-balanced, with the upper portion of the dorsal sepal broadly margined with white. It received a First-class Certificate, together with *C.* $\times$ *Mr. J. E. Shill* (*Actæus* $\times$ *Leeanum*), having the dorsal sepal white, faintly spotted with small red spots, and the general colour of the flower straw yellow. *Dendrobium* $\times$ *Thwaitesiæ* gained an Award of Merit, and I noted a well-flowered plant of *D. nobile album*.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a small group of good quality. An Award of Merit was given to *Sophrolælia Felicia* (*L. Dayana* $\times$ *S.-l. heatonensis*), a flower of rich maroon purple, with the lip still deeper in colour. *Cymbidium* $\times$ *Woodhamsianum* (*eburneo-Lowianum* $\times$ *Lowianum*) is a hybrid of much merit, very like the first-named parent, but much larger in all its parts, and the blotching on the lip finer. Other good things were *Brassocattleya Digbyano-Mendelii*, an *Odontoglossum* $\times$ *amabile* of good colour, *Lycaste Skinneri alba*, *Cypripedium* $\times$ *Pomona*, &c. (Silver Medal).

A. Warburton, Esq., Vine House, Haslingden (gr. Mr. Dalglish), staged a very effective group of *Cypripediums*, relieved with *Odontoglossums*. Awards of Merit were given to *C.* $\times$ *Empress of Russia*, and the greenish-yellow *O. sceptum Masereelianum*. I noted two well-flowered plants of *C. Rothschildianum*. The group was divided, and gained two Silver Medals.

Ziba A. Ward, Esq., Cringlewood, Northenden (gr. Mr. Weatherby), staged a fine mixed group, *Odontoglossums* predominating. *O.* $\times$ *warnhamense* (*Hallii* $\times$ *Pescatorei Charlesworthii*), *O. Pescatorei* var. *Louise*, *O.* $\times$ *Harryano-triumphans*, Ward's var., and *O.* $\times$ *Ossulstoni*, Ward's var., each gained an Award of Merit. Other good things were

O. $\times$ Vuylstekei, O. $\times$ Rolfeæ, the pretty *Odontioda heatonsis*, &c. The group was very effective, richly deserving the award of a Silver Medal.

Messrs. Keeling & Sons, Bradford, received a Bronze Medal for a small group of mixed plants, in which I noted *Cirrhopetalum picturatum* and *Dendrobium Phalænopsis*.

J. McCartney, Esq., Hey House, Bolton (gr. Mr. Holmes), staged a good group of *Cattleya Trianæ* and *C. Percivaliana*, white varieties of *Lælia anceps*, and many good *Cypripediums*. *C. $\times$ aureum Hyeatum* had a First-class Certificate confirmed (Bronze and Silver Medals for group).

Messrs. Moore & Co., Rawdon, Leeds, staged a small group, in which I noted a good plant of *Cypripedium siamense*, *Brassocattleya Digbyano-Mossii*, *Dendrobium Brymerianum*, *Epidendrum $\times$ elegantulum*, *Platyclinis glumacea* var. *valida*, &c.

Mr. Wm. Bolton, Wilderspool, Warrington, showed a small collection of good things, in which I noted a fine *Odontoglossum $\times$ amabile*, a distinct *Cattleya Schröderæ*, *Cypripedium $\times$ Mrs. Wm. Mostyn*, *C. $\times$ Souvenir Amy Moore*, and the very rare *Dendrobium Ashworthiæ* with four flowers.

Mr. John Robson, Altrincham, received a Vote of Thanks for an exhibit of a few good *Cypripedes*.

R. Ashworth, Esq., Newchurch (gr. Mr. Fletcher), staged a pretty little group of mixed plants, in which I noted a good *Odontoglossum Lawrenceanum*, O. $\times$ Vuylstekei, O. $\times$ Lambeauianum of a distinct purple colour, *Dendrobium nobile album*, and *D. $\times$ Bryan* (Bronze Medal).

Messrs. Sander & Sons, St. Albans, staged *Cattleya Trianæ Backhouseana*, *Brassolælia Digbyano-purpurata*, *Lælio-cattleya exoniensis*, with a peculiar slate-blue lip, *Odontoglossum $\times$ Harryano-crispum*, and a good plant of *Barlia longibracteata*.

Mr. Sadler, Newbury, Berks, staged a small group of *Cypripedes* (Vote of Thanks).

E. Rogerson, Esq., Oakdene, Didsbury (gr. Mr. Price), showed *Odontoglossum crispum* Mrs. Peeters, and *Cypripedium aureum Surprise*.

Mr. W. Shackleton, Great Horton, Bradford, staged a mixed group of *Odontoglossum crispum*, *Dendrobium Wardianum*, and a few *Cypripedes*, receiving a Bronze Medal.

Messrs. Heath & Son, Cheltenham, staged a group, containing many good *Cypripedes*, a fine specimen of *Cattleya Percivaliana* with over twenty flowers, *Cymbidium eburneum*, *C. Parishii*, &c. (Bronze Medal).

Messrs. Hugh Low & Co., Enfield, showed *Cypripedium $\times$ Mrs. A. W. Sutton*, *C. $\times$ Graceæ*, and an exceptionally large flower of *C. $\times$ E. J. Seymour* (*callosum $\times$ Prewettii*).

Messrs. Cypher & Sons, Cheltenham, received a Silver Medal for a good group of mixed plants of their usual high quality.

H.T.

DIACATTLEYA COLMANIÆ.

THE annexed figure represents a very interesting generic hybrid, raised in the collection of Sir Jeremiah Colman, Bart., Gatton Park, Reigate, from *Diacrium bicornutum* ♀ and *Cattleya intermedia* var. *nivea* ♂, and is



Fig. 14. *DIACATTLEYA COLMANIÆ.*

reproduced from two photographs by Mr. Bound, which have been combined in one. The plant was exhibited at a meeting of the R. H. S. held on February 11th last, and received an Award of Merit from the Orchid Committee. It combines very clearly the characters of the two parents.

A figure of the *Diacrium* parent is also reproduced (fig. 13), and it will be seen that the seedling has rather taller and more slender stems, which bear two or three leaves at the apex. The inflorescence is also dwarfer, and at present four-flowered, though only one of the four buds was expanded



Fig. 15. *DIACRIUM BICORNUTUM*.

when the photograph was taken. This flower has also been sent by Mr. Bound, and measures $3\frac{1}{2}$ inches across. The sepals and petals are pure white, and the strongly three-lobed lip is tinged with pale sulphur on the front half. The two peculiar angles seen on the disc of the *Diacrium* lip are also present, but much reduced in size. The column is sharply angled, or almost winged below, and there are a few minute purple dots on the face. These modifications in detail show the influence of the *Cattleya* parent.

The plant was also exhibited at the meeting of the Scientific Committee, and gave rise to some discussion as to the naming of generic hybrids, as may be seen by the report. Mr. Bound had previously submitted to me the question whether I considered *Diacrocattleya* to be the best way of combining the names *Diacrium* and *Cattleya*, and as I was unable to be present at the meeting in question, I should like to offer a few remarks. It has long been agreed that hybrids between distinct genera should receive a generic name formed by combining the names of the parent genera, or parts of them, to form a single word, the precedent being set when the late Dr. M. T. Masters coined *Philageria*, to indicate a hybrid between *Philesia buxifolia* and *Lapageria rosea*. When Messrs. Veitch flowered a hybrid between *Colax* and *Zygopetalum*, in 1887, the principle was extended by me to include all the generic hybrid Orchids which had been raised, then seven in number (*Journ. Linn. Soc.* xxiv. pp. 156-170), since which period twenty others have appeared. They may be enumerated alphabetically, as follows:—

Angulocaste,	from	Anguloa and Lycaste.
Anœctomaria,	„	Anœctochilus and Hæmaria.
Brassocatlælia,	„	Brassavola, Cattleya and Lælia.
Brassocattleya,	„	„ and Cattleya.
Brassoepidendrum,	„	„ „ Epidendrum.
Brassolælia,	„	„ „ Lælia.
Chondropetalum,	„	Chondrorhyncha and Zygopetalum.
Dialælia,	„	Diacrium and Lælia.
Dossinimaria,	„	Dossinia and Hæmaria.
Epicattleya,	„	Cattleya and Epidendrum.
Epidiacrium,	„	Diacrium „ „
Epilælia,	„	Epidendrum and Lælia.
Epiphronitis,	„	„ „ Sophronitis.
Læliocattleya,	„	Cattleya and Lælia.
Leptolælia,	„	Lælia and Leptotes.
Macomaria,	„	Hæmaria and Macodes.
Odontioda,	„	Cochlioda and Odontoglossum.
Odontonia,	„	Miltonia „ „
Phaiocalanthe,	„	Calanthe and Phaius.
Phaiocymbidium,	„	? Cymbidium and Phaius.
Schombocattleya,	„	Cattleya and Schomburgkia.
Sophrocatlælia,	„	„ Lælia and Sophronitis.
Sophrocattleya,	„	„ and Sophronitis.
Sophrolælia,	„	Lælia and Sophronitis.
Zygobatemannia,	„	Batemannia and Zygopetalum.
Zygocolax,	„	Colax „ „
Zygonisia,	„	Aganisia „ „

These names seem to me to be well adapted to the purpose for which they were chosen, though I think *Epivola* would have been preferable to *Brassoepidendrum*, both on grounds of precedent and euphony. In two cases the progeny is the result of crossing a generic hybrid with a third genus, and the Scientific Committee suggest that to these a purely conventional name should be assigned, preferably with a distinctive termination. But *Brassocatlælia* and *Sophrocatlælia* may be called conventional names which have the additional merit of being descriptive, and should other cases occur it may be possible to coin equally happy appellations. At all events let us avoid any prohibitory enactment. And it should not be forgotten that *Brassocatlælia* may include hybrids between *Brassocattleya* and *Lælia*, *Brassolælia* and *Cattleya*, *Brassavola* and *Læliocattleya*, *Brassocattleya* and *Brassolælia*, *Brassocattleya* and *Læliocattleya*, *Brassolælia* and *Læliocattleya*, hybrids of *Brassocatlælia* crossed by itself, in fact every possible combination between the three genera. Similar remarks apply to *Sophrocatlælia*. Conventional names that are not descriptive may yet be necessary, but they can scarcely be improvements, so let us not anticipate the evil day. It is quite possible that hybrids will yet be produced combining four or even five genera—the successful union of *Epiphronitis* with *Brassocatlælia* would give us the latter—but the raiser should be able to call it what he likes, always provided that the name is in accordance with the rules of generic nomenclature. For the present hybrid the name *Diacattleya* is here adopted, in harmony with *Dialælia*, and under this name it was recorded in two of the reports of the meeting, though in other cases *Diacrocattleya* is given.

R. A. R.

CALENDAR OF OPERATIONS FOR MARCH.

By W. J. MORGAN, Rann Lea, Rainhill, Lancs.

SHADING.—One of the most important parts of Orchid culture is to have light without the direct rays of the sun reaching the plant. We have tried all sorts of blinds and find the lath roller blinds suit our purpose the best, as they give a satisfactory shade from sun, and they are also of great benefit as a protection from frost in the winter months. We find that by using them it makes a great difference to our coal bill, and keeps the temperatures even.

We do not use ropes and pulleys, as they are a nuisance in frosty weather, for when they get frozen the blinds cannot be used, and ropes are always snapping. Our blinds are fixed on the houses to roll sideways, instead of up and down the roof. They are made in four and five feet widths, and the runners are 1 by 1½ inches in section, made of pitch pine, screwed to

wood pillars of 12 by 1½ inches. They are easily rolled up by hand, and if they are arranged evenly over the roof of the house, they are not noticeable from inside, and by raising them twelve inches from the glass, they do not interfere with the ventilators, and allow a current of air to pass between the blinds and the glass, which is most important in very hot weather. In case of a snowstorm, especially at this time of year, when a considerable fall in temperature is injurious to the plants, we run the blinds out, and although we lose what little light there is to be had while a snowstorm is prevailing, we keep our temperatures even without using extra fire heat. The heat from the glass keeps the snow soft, and with the laths running down the roof instead of sideways, the snow soon slides off, and as soon as the storm is over they can be rolled up again, as there are no pulleys or ropes to freeze. And they can be used in all weathers. We have had our blinds on several years, and they are as good as new. Should any rings or staples break they can easily be replaced, as they can be had from the makers at a trifling cost.

MILTONIA VEXILLARIA will now be in full growth, and the plants will shortly be pushing up their spikes. They must be carefully watched for thrip, which soon disfigure the leaves. Many of the young leaves when they are pushing up are closed up, and are liable to cripple themselves if not assisted to open, but this can be avoided by running the blade, or better still the handle, of a small budding knife gently between the edges of the leaves. They will require an ample supply of water, also syringing on fine days. Slugs should be carefully watched for, as they seem to have a special fancy for the young spikes. A few lettuce leaves scattered about the pots are an effective trap, especially if looked over after dark.

MILTONIA ROEZLII will also be sending up its spikes. It is a pity this variety is not more generally grown, as it is very beautiful when in flower, and being sweetly scented it attracts attention from others than Orchid fanciers. If *Odontoglossum crispum* could be produced with a similar scent it would be much more popular than at present, as its only fault with ladies is the want of fragrance, so there is still plenty of scope for the hybridist. *M. Roezlii* requires warmer treatment than *M. vexillaria*, and much more moisture, both at the roots and in the atmosphere. It should be potted in a mixture of peat, loam, leaves, and moss, with plenty of crock dust, and grown in a light position in a temperature of 70°. They will flower twice in the year, which is a great advantage when flowers are in demand.

MILTONIA CUNEATA will require more moisture now that it is commencing to grow. Any plants that need potting should be attended to as soon as the young growths commence to root, and if they are carefully handled the potting will not prevent them flowering. A similar potting mixture to that advised for *M. Roezlii* will suit practically all this class. We find that in using some loam the flowers come with brighter colours and more sub-

stance, and they last much longer, either on the plants or when cut, and the bulbs do not shrivel after flowering. A little more care is then needed in watering, and if they are freely syringed they will not require much water applied direct at the roots.

CATTLEYA TRIANÆ.—As the plants of this species pass out of flower they should be kept rather drier until the young roots commence to push from the base of the bulb, when any that need repotting should be done, before the roots get long, as then there is no danger of breaking the young roots and thus giving a check to the plant. Newly-potted plants should be placed at the warmest end of the house, where they can have extra moisture, but if this cannot be done the plant stove will suit them to perfection, as they seem to enjoy the heat and moisture of a stove house until they get established, when they can be moved to slightly cooler quarters. A little extra attention after repotting is well repaid at the end of the season with fine bulbs and sheathes. Osmunda fibre with about one-third moss makes a good mixture for Cattleyas, as they root well in it and throw good flowers. Keep the plant on a level with the rim of the pot, as then the roots have a much better chance of getting to the compost than when raised much above the pot; it also prevents the roots being broken when re-staging or packing for exhibition, and woodlice, cockroaches, &c., cannot eat the roots off. We find treacle and arsenic one of the best methods of ridding houses of cockroaches, woodlice, ants, and other pests which the Orchid grower has to contend with. A little of the mixture dropped on small pieces of glass soon clears them out.

LÆLIO-CATTLEYAS AND HYBRID CATTLEYAS.—Any of the early flowering varieties which have passed out of flower will require much the same treatment as that advised for *C. Trianæ*. Plants that are getting over the side of the pots will be better repotted. Clean off all old material, and remove any old bulbs that are of no use to the plant, leaving three or four young bulbs. The old bulbs can be propagated if desired, provided of course there is a dormant eye. Specimen plants that have gone bare in the centre should be pulled apart, and re-made if desired, or potted into single pots. They look much better without the old bulbs, and grow stronger if a little extra care is taken after repotting.

CÆLOGYNE CRISTATA.—This species, with its varieties, will soon require re-potting or top-dressing, the former being preferable for plants that are very crowded. They do well potted in the *Cattleya* mixture. Any that only require top-dressing should have as much of the old material picked out as possible, and then be re-surfaced and pegged down, so that all the young roots can get to the compost. I do not think there is any Orchid which gets more ill-treatment than this *Cœlogyne*. One sees it grown in all sorts of corners; stove, vinery, greenhouse, in fact any out-of-the-way place

is its general home, yet it will always flower well if it is placed where it can get a fair amount of sunlight and air. It seems to be a favourite when in flower with everyone.

PHALÆNOPSIS are nearly always growing. They will need plenty of moisture as the weather gets brighter. Re-surface them with fresh moss, or re-pot if they have overgrown their pots, using a mixture of peat leaves (with the dust taken out), and moss in equal parts, with plenty of crushed crocks and charcoal mixed in. This will suit them well, topping the pots off neatly with fresh moss. Place a few lettuce leaves about the pots, as it will trap any slugs that may happen to be in the moss, and no matter how carefully moss is washed they nearly always make their appearance after a few days.

CYPRIPEDIUMS that have been freshly potted should be syringed twice daily, as it saves watering, and prevents newly-potted plants getting sodden. It is far better for the plants to syringe them with clean soft water than to be always spraying with insecticide to keep down thrip, and they always look happy after a good bath. Everything will be kept cleaner if the syringe is frequently used, and leaves are not so liable to go yellow as soon as we get a spell of bright weather. Keep the fires well in hand, and ready to drive in case of a change in the weather towards evening.

DAMPING-DOWN.—As everything is now starting to grow freely, more damping will need to be done. This I consider the most important point in Orchid growing. No hard and fast rule can be laid down as to how many times a day it should be done, as the position of the houses and the condition of the weather must be the chief guide; still, during the growing season one can scarcely give too much, if the houses are studied as to the amount of moisture required for the plants.

VENTILATION.—Great care will be required in using the top ventilators. If the blinds are down, unless it is a very mild day, it will be better not to use the top ventilators at all or, in any case, not top and bottom at the same time, as it causes a chilly air, even in the warmest houses, and the plants suffer. One can generally tell as soon as a house is entered if too much or too little air is being given. It is far better to let temperatures run up a little with sun heat than chill the houses when it is cold or windy outside.

SHADING.—All the softer-growing Orchids will need shade during the middle of the day. If blinds are not used a good shading can be made with flour and water, which can either be put on with a syringe or brush. It is easier removed than lime, and has the advantage of being transparent in damp or rainy weather, and does not wash off with rain.

TEMPERATURES at night should be kept as advised for last month, allowing them to run up a little higher in the day time as sun heat increases. This increase of temperature from sun heat will benefit the plants considerably, if they are well looked after in other respects.

ORCHIDS AT KEW.

A FINE plant of the rare and beautiful *Eulophiella Peetersiana* is now flowering at Kew, the flowers just beginning to expand at the moment of writing. Two spikes appeared, but the second was immediately cut out so as to avoid weakening the plant. The spike is tall, erect, and the flowers are bright purple, and are better compared with *Lissochilus giganteus* than anything else we can think of. In the same house a plant of the beautiful *Angræcum citratum* is carrying two racemes, with half a dozen *Phalænopsis Schilleriana*, *Vanda suavis*, *V. Watsoni*, and others, making a very bright display. The *Odontoglossum* house is also gay with numerous well-known species, and a varied group of *Lycaste Skinneri* is very effective, and includes several with very richly-marked lips and the chaste *L. S. alba*. There are also several pans of the South African *Satyrion odorum*, with green but very fragrant flowers, two plants of the remarkable *Pleurothallis Roezlii*, the best with nine racemes, a well-flowered plant of *Aërides Vandarum* growing on a raft, three plants of the charming little *Cynorchis compacta*, a fine plant of *Dendrobium Kingianum*, a well-flowered plant of *Masdevallia towarensis*, and numerous others.

Another warm house is very gay with a profusion of *Dendrobiums*, species and hybrids, including the striking *D. atroviolaceum* with three racemes, the graceful little *Maxillaria sanguinea* with seventeen flowers, the rare *Ipsea speciosa*, the beautiful *Spathoglottis* × *Colmanii*, *Acanthophippium sylhetense*, and many others. The *Cattleya* house also contains a number of interesting things, as *C. Loddigesii*, *Lælia harpophylla*, the heliotrope-scented *Epidendrum Allemanii*, *Oncidium pubes*, *Miltonia cuneata*, *Cœlogyne cristata*, with its variety *alba*, &c.

PAPHIOPEDILUM × HARRISIANUM ABNORMAL.

A REMARKABLE flower of *Paphiopedilum* × *Harrisianum* is sent from the collection of J. U. Hodgson, Esq., Higher Bebington Hall, Birkenhead, by Mr. Bell. It was the lower bloom of a twin-flowered scape, and is altogether superior in shape to an ordinary flower from the same plant, being broader and finer in all its parts, and very handsome. It is supposed to be a sport, though it is difficult to suggest a reason. The plant is said to be very strong and healthy, with beautifully-marbled leaves. It is grown in a 12-inch pan, and seems to be a perpetual bloomer, as it has never been without a bloom or two for over two years. It is intended to separate the sport and note its progress.

This was the first hybrid in the genus, and it has proved to be of a rather sportive character, both striped and green varieties having suddenly appeared on plants of the normal form, and these have proved permanent.

DENDROBIUM DELICATUM.

A PHOTOGRAPH of a fine plant of *Dendrobium Kingianum album*, showing over a dozen racemes, also a pseudobulb, with three leaves and two racemes, has been sent by T. J. Wheeler, Esq., Fairlawn House, Frome. Mr. Wheeler remarks that he had it three years without flowering, but that now it is a lovely sight. The variety originally appeared in the collection of the late A. H. Smee, Esq., of Carshalton, and was figured in the *Orchid Album*, in 1888 (vol. vii. t. 332). Mr. Wheeler's plant agrees well, but is evidently not the original plant. It is doubtful, however, whether the plant is a true variety of *D. Kingianum*. Mr. Cooper, of St. Albans, believes it to be a form of *D. delicatum*, Bailey, whose history has been given in these pages (*O.R.* xv. p. 139), of which some plants were imported from Queensland last year, but which have not yet flowered. This *D. delicatum* is rather a mystery, for Bailey at first described it as a variety of *D. speciosum*, yet in general appearance it is rather more like *D. Kingianum*. Bailey gives the habitat as Toowoomba, on the Main Range, where it was collected by B. Crow, and singularly enough *D. Kingianum* var. *pallidum*, Bail., was also found on the Main Range by the same collector. This variety is said to have white flowers, tinged with lilac and spotted with the same colour on the lip, and although I have not seen an authentic example, I believe it agrees with the so-called pale form of *D. Kingianum* which is in cultivation. The flower of this latter has a shorter more curved mentum, and a differently-shaped lip, without the three prominent keels of *D. Kingianum*. I suspect this also to be a hybrid of similar origin. It has rather shorter, more obtuse sepals than the so-called *D. Kingianum album*, and the keels of the lip are nearly obsolete. It is rather curious that the plant should have first been made a variety of one species then of the other, and finally separated from both. And it is significant that it should present several unmistakably intermediate characters. The typical forms of *D. Kingianum* and *D. speciosum* are very distinct from each other, and both are rather widely diffused. In *D. speciosum* the lip is spotted with purple, which is also the case in *D. Kingianum pallidum* and in *D. delicatum*, but not in typical *D. Kingianum*, a fact which is rather significant. In the form sent by Mr. Wheeler some minute pale purple dots can be detected on the lip with a lens, though they are very obscure, but whether they were present in the original of the *Orchid Album* figure could only be seen if the original plant could be found. The artificial hybrid between the two species, raised in the collection of Sir Trevor Lawrence, by the late Mr. Spyers, judging by the description (*O.R.* iv. p. 107), must be remarkably similar, and I hope soon to be able to compare them together. There is evidently an interesting question here to be cleared up.

R. A. ROLFE.

CATTLEYA × FABIA VAR. VIGERIANA.

THE annexed figure represents a very beautiful specimen of *Cattleya* × *Vigeriana*, which was shown by M. Ch. Maron, at a meeting of the Société Nationale d'Horticulture de France held at Paris in November last, and is reproduced from a photograph sent by the exhibitor. It was obtained from *C. Dowiana aurea* crossed with the pollen of *C. labiata flammea*. It is a variety of *C. × Fabia*, which was raised by Messrs. Veitch, from the same two species, and flowered for the first time in 1894. It is a most beautiful hybrid, and the present example shows what it may develop into under



Fig. 16. *CATTLEYA* × *FABIA* VAR. *VIGERIANA*.

good culture, there being about eighteen flowers on the plant. Nothing need be added to the above graphic presentment except as regards colour. It has been figured by M. Goossens (*Dict. Ic. Orch.*, Cat. hyb. t. 84), and the flower is shown as being of the richest deep rose-purple, with a rather darker lip, on which is traced the characteristic deep yellow veining of *C. Dowiana*. It was originally exhibited by M. Maron in November, 1901, at Paris, and a year later it received an Award of Merit from the R.H.S. It is a most beautiful autumn-flowering plant.

ORCHIDS: THEIR STRUCTURE, DEVELOPMENT, AND FERTILISATION.

Notes of a lecture given at a meeting of the Kew Gardeners' Mutual Improvement Society, held on February 17th, 1908, by Mr. R. A. Rolfe, A.L.S., and illustrated with lantern slides.

THE Natural Order Orchidaceæ is a very large and highly specialised family, the largest among Monocotyledons, comprising over 5,000 species. It is very widely distributed, the species being abundant in most of the warm and temperate parts of the globe, but avoiding cold and very dry climates, a few, however, extending to within the Arctic Circle. They are also rare in the remote oceanic islands. They particularly affect warm and moist situations within the tropics, especially on the mountains, and are very abundant on the Andes and the mountains of India and the Malayan Archipelago, but much rarer in Tropical Africa. Many of the species are epiphytic, and these are mostly confined to the tropics, where they have been literally driven up into the trees in the great forest regions, because of the dark and uncongenial conditions of the forest floor. Here they have developed a number of curious adaptations which fit them for the new conditions of existence. Terrestrial species are found over the whole area occupied by the Order, and are abundant in Australia and South Africa, and well represented in Europe, and temperate North and South America.

The family owes its peculiarity largely to the irregular development of the flower, which takes the form of suppression of some of the parts and the union of the remainder into two compound organs, known as the column and the lip, giving the flower a high degree of complexity.

So great is this complexity in some cases that it becomes very difficult to say what some of the parts really are. Take the case of *Coryanthes macrantha* (a photograph now being thrown upon the screen). Here is a monocotyledonous flower, but could any except the initiated trace what is termed the homology of the different parts? The large membranous bodies on one side of the flower consist of the sepals and petals, the lateral sepals being very large and curiously rolled back and twisted at the apex, with the much shorter dorsal sepal between them, and near by the narrow much curled petals. On the other side is a curious bucket-like arrangement, something like a milking pail, suspended on a nearly horizontal arm, at the angle of which is a helmet-shaped body, from which the genus takes its name, literally, "helmet-flower." These parts collectively form the lip. What may be termed the handle of the pail, underneath the helmet, bears a number of deep transverse ridges. Continuous with the pedicel of the flower is the column, rather hidden by the other parts, but its apex is situated just above one side of the bucket, leaving a narrow opening between

the two. At the base of the column, and just over the bucket, may be seen two horns. And now comes the remarkable economy of the flower. When the sepals expand those horn-like bodies are seen to be glands, which exude liquid, drop by drop, and this collects in the bucket beneath until it is full up to the narrow opening just mentioned. The flower possesses a strong perfume and quickly attracts a particular kind of bee which lives in the same district. These bees alight on the fleshy parts of the flower, and fall or jostle each other over into the water beneath. Now the sides of the bucket are very slippery, and the bees are unable to climb out that way, but espying the narrow opening they make for that, and the lip being slightly pliable, they force their way through. The first one to escape invariably brings away the pollen masses on its back, and being by no means deterred by its involuntary bath, it hurries off to another flower, where the process is repeated. This time the bee has the load of pollen on its back, and on again reaching the opening and forcing its way through, this pollen comes in contact with the stigma, which is also close to the opening, and is sufficiently viscid to hold it there, while the bee escapes, and thus fertilisation is effected. Here is a remarkably complex set of arrangements to serve such an apparently simple purpose. It sounds rather like romance, but it has been observed over and over again, and may be seen whenever the plants bloom in their native homes. The flowers behave in precisely the same way in our Orchid houses at home, but unfortunately the bees are absent.

Compare now *Neuwiedia Lindleyi*, the most primitive of existing Orchids (photograph thrown on screen). It is difficult at first sight to see what the two plants have in common. In this case the monocotyledonous structure is more easily traced. The perianth is nearly regular, though turned to one side, and there are three sepals, three alternating petals, three linear stamens on short filaments, and a slender style, with a three-lobed stigma. The stamens and style are united at the base, and the addition of three more stamens would complete the typical monocotyledonous structure—five whorls of three parts each. Three stamens, however, are missing from the front of the flower (not one of the whorls). The three stamens present are the lateral pair of the inner staminal whorl, and the median stamen of the outer whorl. It may help to a clearer conception of the case if I say that the two former are also the perfect stamens of *Cypripedium*, and the latter the single perfect stamen of the great suborder *Monandreae*, but which in *Cypripedium* is modified into a shield-shaped staminode. The anthers recall those of some ordinary *Amaryllidaceous* plant in shape, and the pollen grains are simple, and dry, so that in this respect the plant has scarcely begun to be an Orchid. The stigma is equally three-lobed. The seeds have the typical *Orchidaceous* structure, and the species is terrestrial, with yellow flowers. It is of Malayan origin.

Now comes *Cypripedium montanum*, a North American Orchid. Here the flowers have become completely irregular in shape. The two lateral sepals are united, and the lateral petals elongated and twisted, while the third or median one is modified into a pouch-like organ, called the lip. The side lobes of the pouch are enfolded, so as to partially enclose the column, and over the opening of the pouch is seen the staminode, while over two lateral openings at the base occur the two stamens. Here are great differences from *Neuwiedia*, yet if a careful comparison is made they are seen to be only modifications of the same type—a sort of higher development. The anthers are shortened, and the pollen grains are held together by viscous matter, though still simple, while the middle one of the anthers is transformed into a staminode. The stigma has also become shield-shaped, and is situated beneath the column, in an angle between the staminode and the anthers. The whole structure is an adaptation to secure insect fertilisation. Where the plants grow a bee is found, which visits the flowers. It alights on the pouch, and crawls in by way of the front opening, but cannot turn round and escape by the same way, so it makes for one of the basal openings, and crawls out there, and in doing so its back becomes smeared with viscid pollen from the anther situated over that opening. The process is now repeated with another flower, but as the bee crawls up the pouch it passes beneath the stigma, and when it has pollen on its back this gets smeared on the stigma, and pollination is effected. The structural arrangements of the flower are intended to secure the reproduction of the species, the presence of the suitable insects in the district of course being necessary.

(To be continued.)

ANGULOCASTE BIEVREANA.

A very interesting generic hybrid is figured in a recent number of the *Tribune Horticole* (1907, p. 516, t. 57). It was raised in the collection of His Majesty the King of the Belgians, at Laeken, by M. de Bievre, who gives its history as follows:—"A flower of *Anguloa Ruckeri* was fertilised on September 3rd, 1895, with the pollen of *Lycaste Skinneri* var. *pallida*, and the seed was mature and was sown in the following May, on the pot of the seed parent. A year later a single seedling was detected, which flowered for the first time in July, 1903. It usually produces five or six flowers on each bulb, which are very fragrant, like the *Anguloa* parent." On June 17th, 1906, the plant was exhibited at a meeting of the *Société Royales Linnéenne et de Flore*, Brussels, when bearing thirteen flowers, and was awarded a Certificate of Merit. The flowers are large, and have very broad deep yellow segments, spotted with red on the column, and base of the lip and petals. Professor Cogniaux, in describing the plant, remarks that although M. de Bievre has no doubt about the facts stated, he himself thinks

that the flower must have been previously fertilised by the plant's own pollen, or possibly by *A. Clowesii*, and this implies a doubt as to whether there is any *Lycaste* in it. But there need be no doubt under this head, at all events, so far as the genus is concerned, for the plate contains a separate drawing of the lip, which is totally different from that of *Anguloa*, and much nearer to *Lycaste*. There is, however, a doubt of another kind, and I believe that *Lycaste cruenta* instead of *L. Skinneri* was the pollen parent. The colour of the flower agrees closely with that, and the crest and markings of the lip are almost identical. *L. Skinneri* must have had quite a different influence on the colour. We hope to have the point cleared up. It is a very interesting addition to the list of generic crosses, a list of which is given on page 82.

R. A. R.

ORCHIDS IN SEASON.

AN inflorescence of the handsome *Cymbidium insigne* Glebelands var. is sent from the collection of J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis). It has silvery white sepals and petals, and a pink lip densely streaked and spotted with claret-colour. The plant received a First-class Certificate from the R.H.S. a year ago.

A series of very interesting flowers is sent from the collection of J. J. Neale, Esq., of Penarth, by Mr. Haddon. The plant of *Epidendrum polybulbon* is said to be again quite a mass of flowers, which are very fragrant. *Lælia* is represented by *L. harpophylla*, *L. anceps*, *L. a. Stella*, and *L. rubescens*, the latter said to be bearing nine racemes, and much as when figured two years ago (*O.R.* xiv. p. 41, fig. 5). *Vanda Amesiana* is represented by two good forms, one being nearly white. *Paphiopedilum* is represented by a dark form of the pretty little *P. Fairrieianum*, *P. Spicerianum*, and several others. There are also fine forms of *Cattleya Trianae* and *chocoensis*, the brilliant *Cochlioda vulcanica*, several *Odontoglossums*, and many other well-known species which make the houses look gay at this period of the year.

Flowers of the beautiful *Dendrobium* × *Waltoni*, a natural hybrid between *D. Wardianum* and *D. crassinode*, are sent from the collection of Max Isaac, Esq., Blundellsands, near Liverpool, by Mr. Driver. It is one of a dozen imported *D. Wardianum*, and a flower of the latter is sent for comparison. The hybrid was figured, together with its two parents, at page 177 of our eighth volume.

A flower of the beautiful *Paphiopedilum* × *aureum virginale* is sent from the collection of E. Rogerson, Esq., West Didsbury, Manchester, by Mr. Price, which is remarkable for having an additional petal on one side of the flower. Mr. Price remarks that the plant of *Odontioda Devossiana*, figured on page 41, is now in Mr. Rogerson's collection.

A very beautiful flower of *Cattleya* × *Octave Doin* is sent from the collection of W. P. Marling, Esq., Stanley Park, Stroud, by Mr. Walton. It is a new seedling from *C. Mendelii* × *C. Dowiana aurea*, now flowering for the first time. The margins of the petals are broadly flushed with rose, and the flower fairly typical in other respects.

A four-flowered inflorescence of the same *Cattleya* is sent by Messrs. Charlesworth & Co., Heaton, Bradford, forming quite a picture, and there can be no doubt that this is one of the most beautiful *Cattleyas* that has yet been raised.

Some very interesting seedling *Paphiopedilums* are sent from the collection of O. O. Wrigley, Esq., Bridge Hall, Bury, by Mr. Rogers. *P.* × *memoria-Moensii* × *Charlesworthii*, is a well-shaped flower, of the *Niobe* type, having a broad white dorsal sepal prettily lined with purple-brown, and the petals strongly undulate. *P.* × *Minos Youngii* × *insigne* Harefield Hall var. is a large and well-shaped flower, fairly intermediate in character. *P. villosum aureum* × *Beeckmanii* is another very promising thing, of compact shape, and with broad, richly coloured segments. A very pretty seedling from *P. callosum* × *hirsutissimum* is a form of *P.* × *Doncasterianum*, and is much admired by Mr. Wrigley. The others are good forms of *P.* × *Lecanum*, and *P.* × *Euryades* New Hall Hey var., the latter having a very handsomely-blotched dorsal sepal, with broad well-coloured petals and lip.

A good form of *Lycaste Skinneri* is sent from the collection of the Right Hon. J. Chamberlain, Highbury, Birmingham, by Mr. Mackay, having the usual blush-coloured sepals, and very richly-coloured petals and lip.

NOTES.

THREE meetings of the Royal Horticultural Society are arranged to be held at the Royal Horticultural Hall, Vincent-square, Westminster, during March, on the 3rd, 14th, and 31st, when the Orchid Committee will meet at the usual hour, 12 o'clock noon.

The Manchester and North of England Orchid Society will hold meetings at the Coal Exchange, Manchester, on March 5th and 19th. The Committee meets at noon, and the exhibits are open to inspection from 1 to 4 p.m. The following meeting is fixed for April 2nd.

The Editor of *Horticulture*, 11, Hamilton-place, Boston, Mass., U.S.A., writes as follows:—"At present I am interested in a movement now in progress to establish an Orchid Society in America under amateur auspices. I do not know thus far what the outcome will be, but the Orchid is steadily advancing in popular estimation here, and we hope for sufficient support to

place the Society on a substantial basis. Anything you can do to bring about this desirable consummation will, I am sure, be appreciated by the Orchid lovers of America." We are pleased to call attention to the matter, as we have numerous readers in America, some of whom are no doubt interested in the subject.

With respect to the Mendelian expectation of the proportion of albinos that should occur if the coloured reversions of *Cypripediums* were "selfed" or bred together, Mr. C. C. Hurst writes that the result will be nine coloured to seven albinos, not three to one (as suggested in the article at pp. 58-61 of our last issue). We have not heard if Mr. Cookson has made the experiment, but we certainly hope that he will do so.

The following notes of Orchids exhibited at the R.H.S. Scientific Committee meeting held on February 11th are taken from the Report:—

BIGENERIC ORCHID HYBRID.—Sir Jeremiah Colman showed a hybrid raised between *Diacrium bicornutum* and *Cattleya intermedia alba*. The colour of the *Diacrium* had been almost entirely lost except for a tinge of sulphur in the labellum. The parent species are usually regarded as being widely separated in natural relationship, but a hybrid between *D. bicornutum* and *Lælia cinnabarina* was awarded a Botanical Certificate on March 14, 1905.

NOMENCLATURE OF HYBRID ORCHIDS, &c.—Some discussion took place with regard to the naming of hybrids between species assigned to two or more genera. The general opinion was that such hybrids should, when raised between plants belonging to two different genera, have the names of both genera indicated; but where the progeny was the result of crossing a bigeneric hybrid with a plant of another genus altogether, a purely conventional name should be assigned, preferably with a distinctive termination. The further discussion of the matter was adjourned to another meeting.

ONCIDIUM SPHACELATUM.—In several notes to the *Orchid Review*, referring to the local Orchids of Mexico, I have mentioned *Oncidium altissimum*. This is a mistake, as the plant is *O. sphacelatum*. I do not think that *O. altissimum* occurs in Mexico at all.—J. C. HARVEY.

A PHOTOGRAPH of a very curious and beautiful form of *Cattleya labiata* is sent by Messrs. Wheeler & Co., of Waban, Massachusetts. It is called *C. labiata* var. *polychilos*. Messrs. Wheeler remark:—"We received this plant some four years ago, among an importation from Pernambuco, and it has flowered without variation each year. In November, 1907, we exhibited the plant, and received a First-class Certificate from the Massachusetts Horticultural Society. It is a striking and handsome variety, the petals having the same coloration (purple, pink and yellow) as the lip."

ORCHID PORTRAITS.

CYMBIDIUM X LADY COLMAN.—*Gard. Mag.*, 1908, pp. 133, 134, with fig.

CYPRIPEDIUM X CHAPMANII.—*Journ. Hort.*, 1908, i. p. 145, with fig.

CYPRIPEDIUM X DOM CARLOS REX.—*Gard. Mag.*, 1908, p. 144, with fig.

CYPRIPEDIUM FAIRRIEANUM.—*Gard. Mag.*, 1908, p. 165, with fig.

CYPRIPEDIUM X MINOS, YOUNG'S VAR.—*Gard. Chron.*, 1908, i. p. 74, fig. 35.

DIACRO-CATTLEYA X COLMANÆ.—*Gard. Chron.*, 1908, i. p. 115, fig. 45; *Journ. Hort.*, 1908, i. p. 167, with fig.

LÆLIA ANCEPS.—*Gard. Mag.*, 1908, i. p. 79, with fig.

LÆLIO-CATTLEYA QUEEN ALEXANDRA.—*Journ. Hort.*, 1908, i. p. 187, with fig.

ODONTIODA VULYSTEKEÆ.—*Gartenfl.*, 1908, p. 57, t. 1569, fig. 1.

ODONTOGLOSSUM X ARDENTISSIMUM, VAR. IMPERATRIX AUGUSTE VICTORIA.—*Gartenfl.*, 1908, p. 58, t. 1569, fig. 5.

ODONTOGLOSSUM X BINGELIANUM.—*Garden*, 1908, i. p. 51, with fig.

ODONTOGLOSSUM CRISPUM JEAN LINDEN.—*Gard. Mag.*, 1908, p. 95, with fig.

ODONTOGLOSSUM X EXIMIUM.—*Gartenfl.*, 1908, p. 58, t. 1569, fig. 2.

ODONTOGLOSSUM X HARRYANO-CRISPUM.—*Gartenfl.*, 1908, p. 58, t. 1569, fig. 4.

ODONTOGLOSSUM HYBRIDUM BINGELIANUM.—*Journ. Hort.*, 1908, i. p. 123, with fig.

ODONTOGLOSSUM X ROLFEÆ.—*Gartenfl.*, 1908, p. 58, t. 1569, fig. 3.

VANDA WATSONI.—*Gard. Chron.*, 1908, i. p. 131, fig. 52.

 ANSWERS TO CORRESPONDENTS.

[Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An ADDRESSED postcard must be sent if a reply by post is desired (abroad, reply postcards should be used). Subjects of special interest will be dealt with in the body of the work].

J. W. P. Epidendrum Brassavolæ, Rchb. f.

R. G. The minute spots in the leaves of *Oncidium flexuosum* are, we believe, caused by thrip, which should be kept in check by occasional fumigations.

J. F. S. Stelis, species not yet identified.

Photographs received with thanks. W. & Co.; W. P. B.; Ch. M.; T. J. W.

We have received from the Agricultural and Horticultural Association, 92, Long Acre, W.C., the thirteenth issue of *One & All Gardening*, edited by Edward Owen Greening, F.R.H.S. It is well-printed and profusely illustrated, but we do not find in it any references to Orchids.

CATALOGUES RECEIVED.—Descriptive and priced Catalogue of Messrs. Charlesworth & Co., Heaton, Bradford, containing a very fine series of species and hybrids. Catalogue Générale of M. J. de Cock, Meirelbeke-Ghent, containing a few Orchids.

RECEIVED.—Catalogue of Fire-Extinguishers, Patent Oil-Filters and Cabinets, &c. from the Valor Co., Ltd., Aston Cross, Birmingham.

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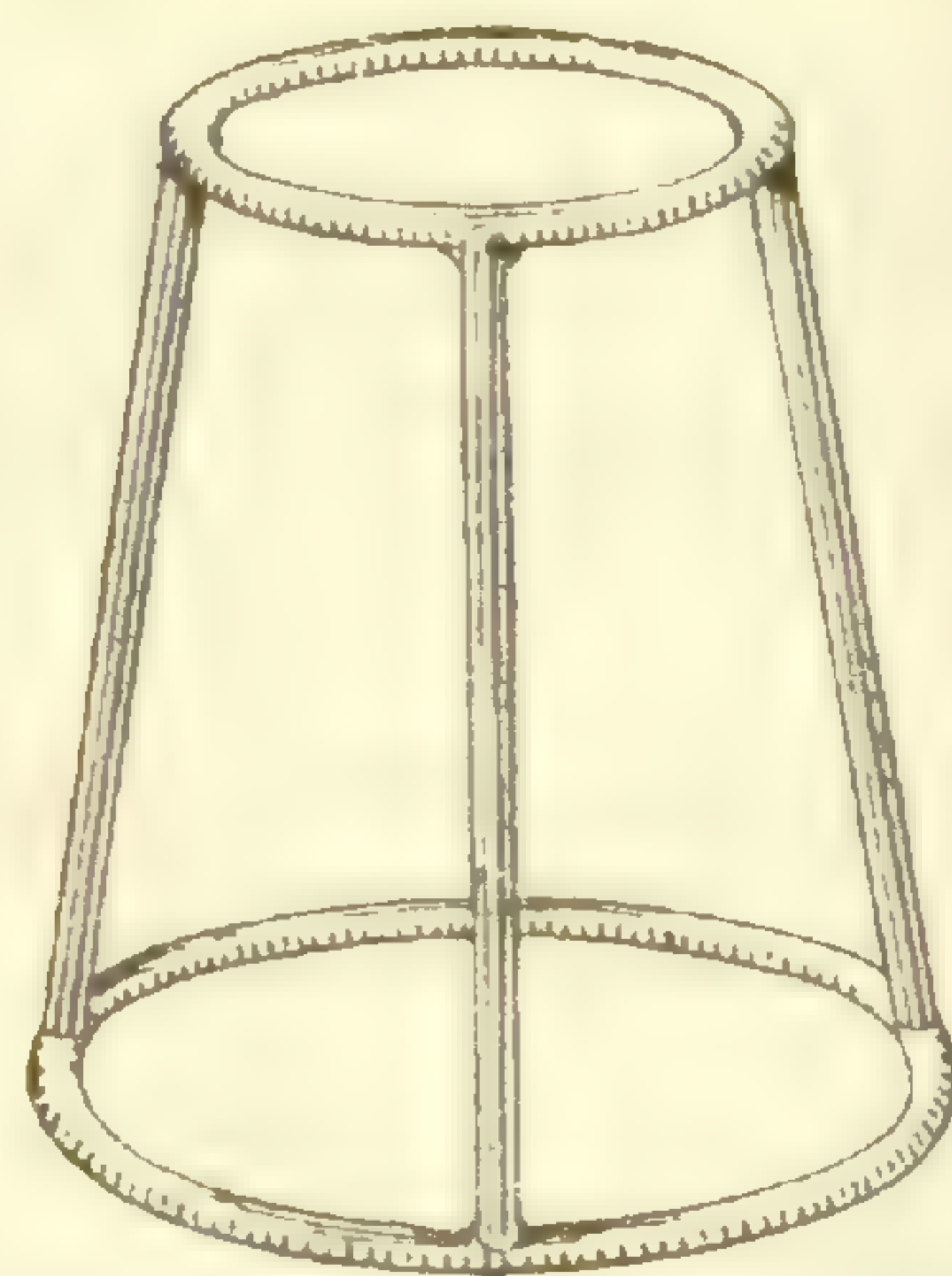
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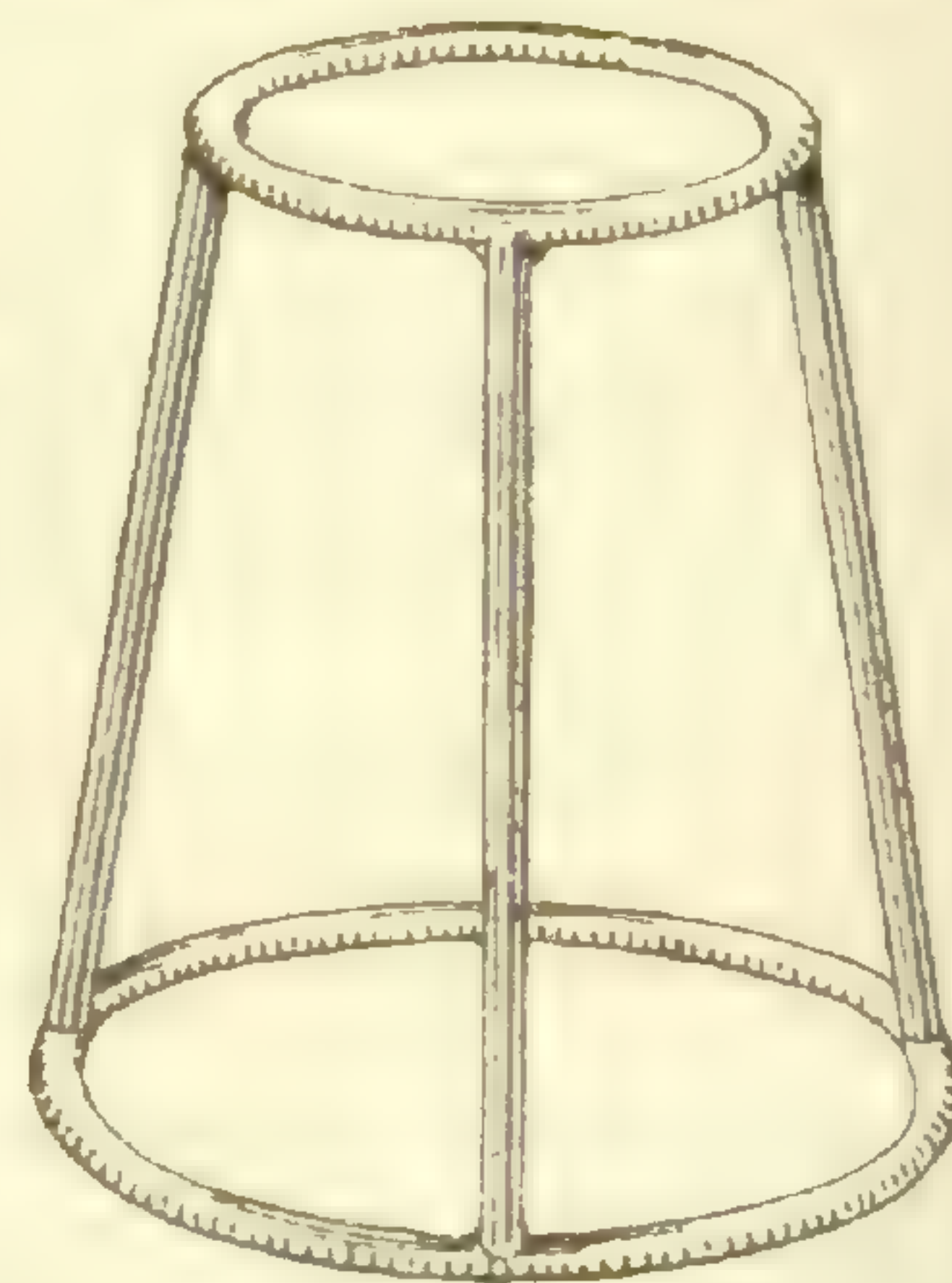
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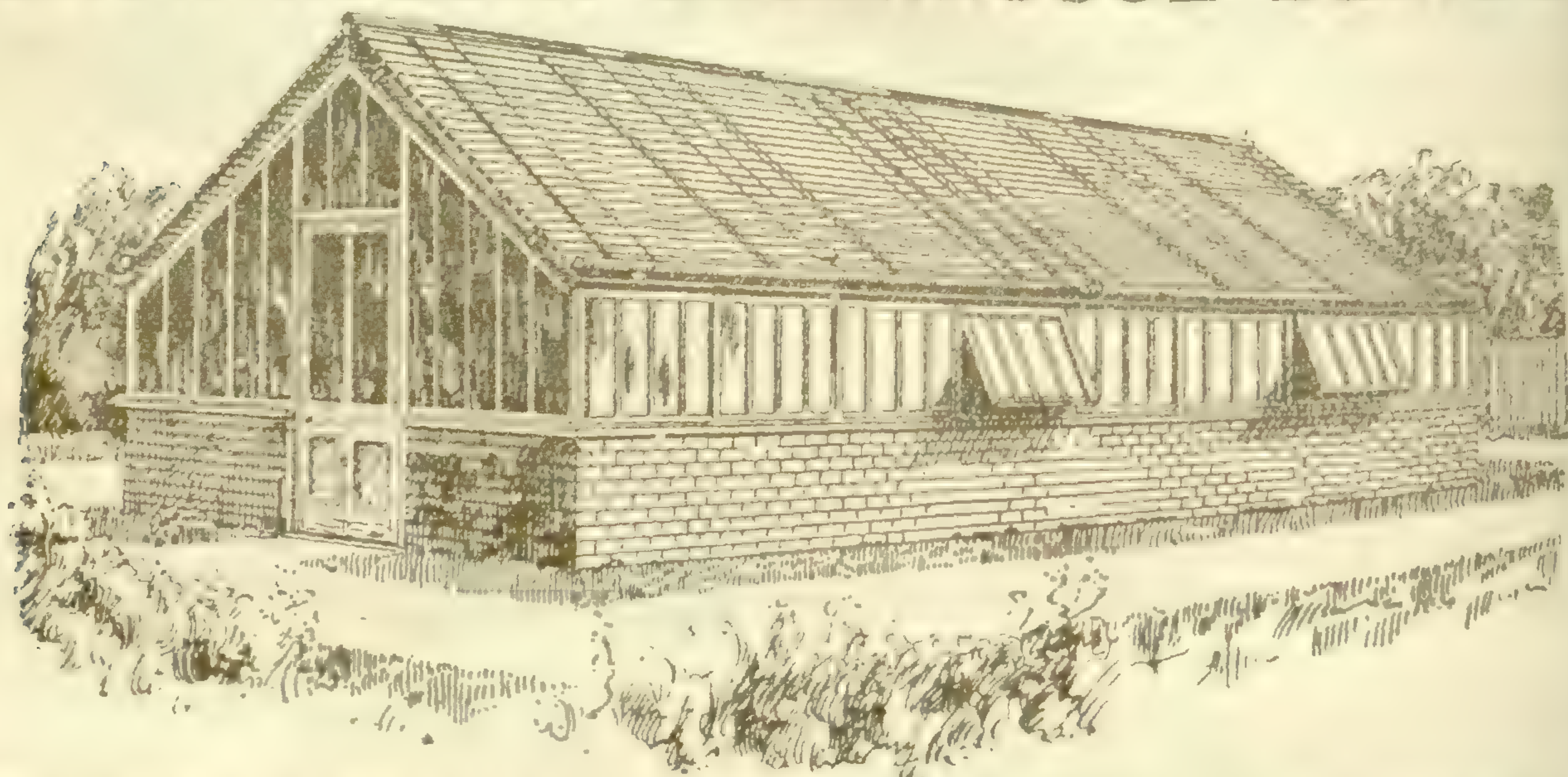
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VOL. XVI.]

APRIL, 1908.

[No. 184.]

THE
ORCHID REVIEW:
An Illustrated Monthly Journal of Orchidology.

Contents.

	PAGE		PAGE
Albinism, inheritance of, in Orchids ...	102	Odontioda Lutetia ...	125
Paphiopedilum × Helena (fig. 17) ...	104	Odontoglossum × Clytie ...	125
P. × Helena var. Armstrongiæ (fig. 18) ...	105	Odontoglossum × Eleanor ...	125
Albinism in Paphiopedilum insigne ...	109	Lycaste Skinneri alba (fig. 19) ...	113
Answers to Correspondents ...	128	Notes ...	126
Beginner's Collection ...	101	Obituary: Marquis de Wavrin ...	98
Book, Notice of ...	109	Orchid Portraits ...	128
Calendar of Operations for April ...	106	Orchids in season ...	110
Cynorchis ...	112	Orchids: their structure, development and	
Dendrobium delicatum ...	112	fertilisation ...	99
Hybridising with mixed Pollen ...	97	Societies ...	114
Hybridising with stored Pollen ...	111	Manchester and North of England	
Hybridist ...	125	Orchid ...	121
Lælia × Groganii ...	125	Royal Horticultural ...	114

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Volumes I. to XV. can be supplied unbound at 6/-, or bound in cloth, 7/6, postage extra. Cost of postage: book post, 9d. per volume; parcel post within the United Kingdom only, 5d. per single volume (series by weight).

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THE ORCHID REVIEW.

VOL. XVI.]

APRIL, 1908.

[No. 184.

HYBRIDISING WITH MIXED POLLEN.

WE have now another remarkable result of hybridising with mixed pollen to record, even more striking than the one mentioned at page 375 of our last volume. Flowers of two very diverse seedlings have been sent by M. L. Cappe, Vésinet, France, who writes as follows : " The two inflorescences sent herewith were raised from the same seed pod, which at first sight seems extraordinary, and even impossible, until the facts are explained. On March 7th, 1901, I fertilised a flower of *Lælio-cattleya* Cappei (*Lælia cinnabarina* × *Cattleya gigas*), with mixed pollen of *Lælia flava* and *Cattleya Mendelii*. The resulting capsule matured, and the seed was sown, and when it germinated some of the seedlings were seen to differ from the others in the shape of the bulbs and leaves. The first seedling flowered a year ago, and was noted on page 92 of your last volume. It has bloomed again, and I send the scape, now bearing seven flowers. The habit, shape of bulbs, leaves, and flowers, the long scape, and the deep yellow colour, all show very strongly the influence of *Lælia flava*, but the crisped lip shows the influence of *L. cinnabarina*, coming through *L.-c. Cappei*. The second seedling out of the same batch, which has now produced its first flower, shows a great approach to *C. Mendelii* in the shape of the bulbs and leaves, while the sepals and petals are well-developed, and the ample lip has the very rich colour of *L.-c. Cappei* and the crisped shape which comes from *L. cinnabarina*. This proves that if we fertilise one and the same flower with the pollen of two different species, the pollen tubes from one species may fertilise part of the ovules, and the pollen tubes from the second species may fertilise some of the others. It would be most interesting to have the experience of other hybridists on the subject."

Without the record of origin we should have taken the first-mentioned for an inflorescence of *Lælia Cowanii*, and we should say that *Cattleya Mendelii* has taken no part in the production of this hybrid. And further, the influence of the original *C. Warscewiczii* (one parent of *L.-c. Cappei*) seems to have been entirely eliminated, even to the pollen. It looks more like a case of extreme dissociation than of dominance, though it would be interesting another year to see if self-fertilised seedlings can be obtained.

In the other flower mentioned the character of *L.-c. Cappei* and *C. Mendelii* are very well blended, and we should say that it is a true hybrid between them (without any trace of *L. flava*). The petals are nearly two inches broad, and have an expanse of six inches, their colour, with that of the petals, being pale delicate salmon pink, while the lip is nearly three inches long, much crisped, intense purple-crimson in front and on the margin of the side lobes, the throat deep yellow, and the basal part buff suffused and veined with light reddish brown. It is a beautiful flower, and should develop into a fine thing. The suggested explanation of the phenomenon appears to us to be correct, and we should like to know the behaviour of any other seedlings out of the same batch, as that might throw some light on the apparent total suppression of the influence of *Cattleya Warscewiczii* from the yellow-flowered seedling.

OBITUARY.

MARQUIS DE WAVRIN.—It is with the deepest regret that we have to record the death of the Marquis de Wavrin, Chateau de Ronsele, Ghent, which took place on February 24th last. The deceased was one of the most enthusiastic and successful of Belgian Orchidists, and the possessor of a very choice collection, and we well remember the fine display he made at the last Quinquennial Exhibition at Ghent. He was a frequent exhibitor at the horticultural meetings at Ghent, and an occasional exhibitor at those of the Royal Horticultural Society, in London. He was a very successful hybridist, and several interesting hybrids raised by him have already been recorded, among which we recall the beautiful *Cattleya* × *Mdlle. Marie Henriette de Wavrin* (*C. Loddigesii* × *C. Rex*), *Lælia* × *De Geestiana* (*L. flava* × *L. Jongheana*), and *L.* × *Adrienne* (*L. Jongheana* × *L. præstans*). We believe that a very large number of choice seedlings exist in his collection which have not yet reached the flowering stage. The *Revue de l'Horticulture Belge*, in its issue of March 1st, gives an excellent portrait of the deceased gentleman, who, it remarks, had been unwell for some time, but he continued his journalistic occupations, and a fatal termination of the illness was not anticipated. His decease is a great loss to Belgian horticulture. His name is commemorated in *Cattleya* × *Wavriniana*, raised by M. Peeters, of Brussels, from *C. Warscewiczii* and *C. granulosa Schofieldiana*, and by *Lælio-cattleya* × *Wavrinii*, a handsome natural hybrid from *Cattleya Walkeriana* and *Lælia crispa*, which was figured at page 249 of our last volume.

Since the above was written we have learnt that the collection is to be dispersed, the sale by public auction having been arranged to take place at Ghent during the week of the forthcoming great Quinquennial Show. An important notice on the subject appears in our advertisement pages.

ORCHIDS: THEIR STRUCTURE, DEVELOPMENT, AND FERTILISATION.

Notes of a lecture given at a meeting of the Kew Gardeners' Mutual Improvement Society, held on February 17th, 1908, by Mr. R. A. Rolfe, A.L.S., and illustrated with lantern slides.

(Continued from page 92.)

POGONIA pulchella (now thrown on the screen) represents a new phase of development. It also is terrestrial, but there are small basal tubers, containing stores of nutriment, and solitary basal leaves. But it is in the floral structure that the great difference comes in. We have now reached the great suborder Monandræ, characterised by the possession of a single stamen—the median one of the outer staminal whorl, and equivalent to the staminode of *Cypripedium*—at the apex of the column. The pollen grains are powdery, and very loosely connected together by threads, the contents of the two anther cells being loosely aggregated together into two oblong pollinia, which break up at almost the slightest touch. Here a new organ comes into existence, called the rosetellum, which is a modification of the third or median lobe of the stigma—the one immediately in front of the anther. The other two are confluent into a single one, situated on the face of the column, underneath the anther. The rosetellum has a double function, primarily that of secreting a viscid fluid, which serves to attach the pollinia to the insects which fertilise the flower, and secondarily of preventing the said pollinia from falling on to the stigma beneath. The viscid matter secreted by the rosetellum is of quite a different character from that of the stigma (which it represents), for it dries very quickly on exposure to the air, while that of the stigma remains sticky for a long period. It has become modified in accordance with the special work which it has to perform. The lip forms a kind of landing-stage on which the insect alights, and on crawling up into the flower it touches both the rosetellum and the anther, liberating some of the viscus and the pollinia at the same time, so that when the insect retreats it carries them away, and on visiting another flower the protruding pollen comes in contact with the stigma, to which it in turn adheres. When the insect again retreats part of the pollen is left upon the stigma, and fertilisation naturally follows.

In *Epipogon Gmelinii* (the next slide) a further development is reached. The pollen grains are much more strongly coherent, and some of them towards the base of each pollen mass are modified into a slender caudicle, which is attached to a small roundish gland by which the pollinia adhere to the body of the fertilising insect. The united pollinia and gland are called the pollinarium, a compound organ, partly derived from the staminal whorl, and partly from the pistillate. This condition represents a still further degree of specialisation. The vegetative organs show great

reduction, there being no leaves and no green colouring matter, but simply a mass of branching coral-like roots. The plant is a saphrophyte, living on decaying vegetable matter, having lost the power of deriving it direct from the soil.

Vanilla planifolia (next shown) closely resembles *Pogonia* in the condition and consistency of the pollen, but the rostellum is enlarged, becoming a large flap-shaped body, which hangs over the stigma, and moves on a kind of hinge at the base. The lip is united to the margins of the column for a considerable distance, forming a broad tube, and down this the bee which fertilises the flower has to crawl. On the disc of the lip is situated a curious tuft of hairs or lamellæ, directed backwards, which retard the insect's retreat, and on lifting itself over them, it lifts the flap-like rostellum, and if it has pollen on its back it must inevitably leave it upon the stigma. The *Vanilla* is almost the only Orchid of much economic importance, and its culture now forms a great industry, but owing to the absence of the necessary bee from most of the localities where the plant is cultivated the flowers have to be fertilised by hand. In Mexico and Central America, however, where the plant and bee are both indigenous, this is not necessary. The *Vanilla* is a tall climber, a modification of the vegetative organs adapting it to its natural conditions of living in a tropical forest, growing in the soil of the forest floor, and sending up its branches into the trees, so that the flowers and fruit may develop in the light and sunshine.

The preceding are representatives of a very large and diversified group of terrestrial Orchids, the Neottieæ, which is not represented in cultivation in proportion to its numbers, because many of the species are not showy. They exhibit great diversity among themselves, and in the large Australasian subtribe Diurideæ occur many very highly complex structures, of which the genus *Pterostylis* is one of the most remarkable, having a sensitive lip, which closes up and partially imprisons its insect visitors.

The Ophrydeæ follow naturally, as another very large and widely diffused tribe of terrestrial Orchids, which is familiar to us through the genera *Orchis*, *Ophrys*, and *Habenaria*, also by such cultivated types as *Disa*, *Cynorchis*, and others. In habit a good many of them resemble the Neottieæ, but in the structure of the anther and arrangements for fertilisation they are much more highly specialised. There is not time to go into much detail respecting them, but a slide of *Bonatea antennifera* illustrates one of the most highly complex of existing Orchids.

The first thing which strikes one on seeing this flower is the large number of parts, and there is a difficulty in making out what some of them are. The lip is divided into three narrow lobes, but what appear to be two additional lobes prove to belong to the petals. These latter are divided to the base into two diverging lobes, the upper half of each being appressed to

the margins of the dorsal sepal, forming a hood over the column, and the other half extending forward and simulating lobes of the lip. Two other long clavate bodies follow the same direction, and these are the stigmas. They are formed by the division of the stigmatic lobe into two, each being carried forward on a long style. The column occupies its usual position, but is remarkable in shape. The rostellum is large and cucullate, and is also extended in front into a pair of attenuated side lobes, at the apex of which is seen a small exserted gland, to which the long attenuated caudicle of the pollinia are attached, and from which they extend back to the pollen masses in a pair of narrow channels. The lip is extended at the base into a long slender spur.

The fertilising insect alights on the flower, and inserts its proboscis into the spur in search of nectar, in doing which it touches the glands of the rostellum, which adhere to it. When the insect flies away the caudicles are dragged out of their channels, and the pollinia from their pouch, and hang down beneath the insect's head, in such a position that when it alights on another flower the pollinia come in contact with the stigmas, and some of the pollen grains are left behind. The action may be imitated exactly by inserting a lead pencil towards the mouth of the spur. The first time the pollinia are brought away, and the second time shows the way the pollinia strike the stigmas and leave some of the pollen grains behind.

The Ophrydeæ present some other complex characters. In *Orchis* and *Ophrys* the glands of the rostellum are included within pouch-like extensions of the rostellum, which only rupture when touched by the fertilising insect. In *Satyrium* the lip is uppermost, and hood-shaped, with two spurs or sacs at the base. In the allied genus *Disa* it is the dorsal sepal which is superior, and more or less galeate and spurred.

(To be continued.)

A BEGINNER'S COLLECTION.

I COMMENCED growing Orchids in 1903, having bought one for 1s. I potted it in bracken mould, mixed with brick dust. The plant was not named, and neither my gardener nor I had any knowledge whatever of their culture, in fact it was the first we had seen. The plant, however, progressed satisfactorily for a while, until, from curiosity, I turned it out of the pot to see what progress the roots were making. I was astonished at the number of roots it had made and determined to grow more. My gardener was just as interested as I was. I saw Mr. Burberry's book advertised, and bought a copy, and in that I saw a notice of the *Orchid Review*, and became a subscriber.

It was not long before I tried my hand at hybridising. I tried many crosses, obtained good seed, but no results. Last autumn I discovered

several *Cypripedium* seedlings on a pot. How they got there I don't know. These I transferred to small pots, but I have lost all but one. I sowed some *Dendrobium* seed in February, and without exaggeration I should say there are some thousands germinating, but I anticipate that the result will be as in the other instance, nil.

My collection has now assumed a respectable size, consisting, as it does, of some 950 plants. The *Cattleyas* and *Dendrobiums* do wonderfully well, one of my *D. nobile* having made a bulb 33 inches long by an inch in diameter. My method of culture is a very ordinary one, and would not interest, but it evidently suits the plants. I am of opinion that anyone with ordinary intelligence, provided that the interest is there, can grow either *Cattleyas*, *Lælias* or *Dendrobiums*.

At present I have not been very successful with *Odontoglossums*, but I expect to have much better results during the current year. The house was not suitable, but I have made a complete alteration. It is a lean-to, and I have had the stage altered, and the back wall covered with ferns, and these, being continually moist, have added considerably to the humidity of the atmosphere—in fact, with all the ventilators open, the hygrometer registers 5 degrees below saturation point, whereas with only the lower ventilators open one degree below saturation is easily maintained. Of course, these conditions have only obtained since I made the above alterations.

With *Zygopetalums* my failure has been complete, deterioration invariably commencing with the young growths, the central leaves turning black, and rotting out.—*Amateur*.

INHERITANCE OF ALBINISM IN ORCHIDS.

At the meeting of the R.H.S. Scientific Committee held on March 3rd the following communication was read from Mr. C. C. Hurst, F.L.S.:—
“Two distinct and definite cases of albino Orchids producing coloured forms when crossed were recently brought before this Committee by Mr. H. J. Chapman. Such facts, accepted by the Mendelians, are important, inasmuch as they go to show that albinism in Orchids is inherited in a similar manner to albinism in Sweet Peas and Ten-week Stocks, and in accordance with Mendel's Law. An albino Orchid is distinguished from a coloured one by the absence of purple sap. For instance, the well-known *Paphiopedilum* (*Cypripedium*) *insigne* *Sanderæ* is an albino form from which the purple sap of the type has disappeared. Recent experiments with Sweet Peas and Stocks, carried out by Mr. W. Bateson, F.R.S., Mr. R. C. Punnett, and Miss E. R. Saunders, at Cambridge, have fully demonstrated that the appearance of sap colour depends on the simultaneous presence of two colour factors. If both of the colour factors are present the sap is coloured, but if either (or both) of the colour factors is

absent, the sap is colourless. With regard to the cases of *Paphiopedilum* (*Cypripedium*) brought forward by Mr. Chapman, for the sake of simplicity we will call the two colour factors C. and P. The typical coloured forms of *P. insigne*, *P. bellatulum*, *P. callosum*, and *P. Lawrenceanum* will therefore be carrying both of the colour factors C and P. Their albinos will, on the other hand, be carrying either the C factor alone, or the P factor alone (or neither). The known facts of the breeding of albinos of these four species seem to be in accordance with the conception that *P. insigne* Sanderæ and *P. bellatulum* album are carrying the factor C alone: while *P. callosum* Sanderæ and *P. Lawrenceanum* Hyeaunum are carrying the factor P alone (or vice versâ) as the following table, comprising all the results known to me, shows:—

TABLE A.

- 1, *P. insigne* Sanderæ (C) × *P. insigne* Sanderæ (C) gives albinos (C C).
- 2, *P. callosum* Sanderæ (P) × *P. callosum* Sanderæ (P) gives albinos (P P).
- 3, *P. Lawrenceanum* Hyeaunum (P) × *P. Lawrenceanum* Hyeaunum (P) gives albinos (PP).
- 4, *P. Lawrenceanum* Hyeaunum (P) × *P. callosum* Sanderæ (P) gives albinos (PP).
- 5, *P. callosum* Sanderæ (P) × *P. insigne* Sanderæ (C) gives coloured hybrids (C P).
- 6, *P. callosum* Sanderæ (P) × *P. bellatulum* album (C) gives coloured hybrids (C P).
- 7, *P. bellatulum* album (C) × *P. Lawrenceanum* Hyeaunum (P) gives coloured hybrids (C P).

The next table gives the remaining possible matings between the albinos concerned, together with the *expected* results:—

TABLE B.

- 1, *P. bellatulum* album (C) × *P. bellatulum* album (C) should give albinos (C C).
- 2, *P. bellatulum* album (C) × *P. insigne* Sanderæ (C) should give albinos (C C).
- 3, *P. insigne* Sanderæ (C) × *P. Lawrenceanum* Hyeaunum (P) should give coloured hybrids (C P).

Future results will show how far the above conception, based on Mendel's Law, is correct. If Mr. Chapman thinks well to self the coloured hybrids that he obtained from two albinos, he may expect to get, on the average, nine coloured forms to seven albinos."

At the meeting held on January 28th the hybrid between *P. insigne* Sanderæ and *P. bellatulum* album was exhibited by Messrs. Armstrong & Brown, of Tunbridge Wells, and was thus recorded (*O.R.* xvi. p. 72): "A

particularly interesting feature was a series of the pretty little hybrid called *C. Helen II.* (*insigne* × *bellatulum*). Besides examples of the typical form, there was the variety *Armstrongiæ*, obtained from the albino forms *C. insigne Sanderæ* × *bellatulum album*, and having cream white flowers dotted with purple, and another form, obtained from *C. insigne Chantini* × *bellatulum album*."

A figure of the variety *Armstrongiæ* is here given (fig. 18), together with one of the typical form (fig. 17). It was intended to include all three in one group,



Fig. 17. *PAPHIOPEDILUM* × *HELENA*.

but the raisers remark that the third mentioned was too far gone when the photograph was taken. They, however, describe the shape of the flower as being similar to the variety *Armstrongiæ*, and the ground colour tinged with very pale violet, with the spotting intermediate between the two. As regards the variety *Armstrongiæ* they remark that it is "not quite an albino, which is no doubt accounted for by the minute spots (more or less) in *insigne Sanderæ*." The colour may be described as suffused with cream, and the very numerous

spots light purple. In the typical form the ground colour is cream yellow, and the blotches brownish purple. The third flower, which we also saw, may be described as fairly intermediate between the two, as might have been expected. The figures are taken on precisely the same scale, having been taken on one plate, and were only separated because the photographer had placed them too far apart for reproduction in one block. The parent varieties are well known, but it may be added that the *P. bellatulum* used as the pollen parent was a good ordinary spotted form, and that *P. bellatulum album* was the pollen parent in the other two cases. It may be



Fig. 18. *PAPHIOPEDILUM HELENA* VAR. *ARMSTRONGIÆ*.

added that *P. × Helena* is the adopted name of this hybrid (*O.R.* x. p. 64). It is quite clear that the hybrid variety does not answer to the Mendelian prediction, and the reason I believe to be that when the albinos of widely separated species are intercrossed an opportunity is afforded for reversion, or a return to the normal, as explained in greater detail at page 60. A multitude of diverse ancestral "tendencies" are combined in such a hybrid, and if one could only trace the history of the two parents back to their common starting point one could realize better the question to be solved. It is here that the hypothetical characters "C" and "P" may be looked

for. In the present case we see that not only the presence or absence, but even the *amount* of pigment present in the parents exerts its influence on the resulting hybrid, which is in accordance with the experience of hybridists in innumerable other cases.

R. A. R.

The following note on the subject appears in the Report of the Scientific Committee meeting held on March 17th:—

CROSSES OF ALBINO ORCHIDS.—In reference to Mr. Hurst's communication to the last meeting upon this point, Mr. Rolfe wrote:—"Paphiopedilum insigne Sanderæ × P. bellatulum album does not yield an albino hybrid (see *Orchid Review*, 1908, p. 72), as should have been the case according to the theory mentioned by Mr. Hurst at the last meeting. It has very numerous minute purple dots on both the petals and dorsal sepal, though the ground colour is whiter, and the spots fewer and very much smaller than when the ordinary forms of the species are crossed. P. bellatulum album 'selfed' would, I have little doubt, come true, and P. insigne Sanderæ × P. Lawrenceanum Hyeaenum I should expect to give coloured hybrids, because it is a precisely parallel cross to P. insigne Sanderæ × P. callosum Sanderæ, and combines the same quite distinct sections of the genus. In fact, P. callosum and P. Lawrenceanum (with, of course, their albino forms), are very intimately allied. The mysterious 'factor' supposed to be involved, I believe to be simply the opportunity for reversion which is afforded by crosses between such diverse species. The two combinations last mentioned should certainly be attempted."

CALENDAR OF OPERATIONS FOR APRIL.

By W. J. MORGAN, Rann Lea Gardens, Rainhill, Lancs.

ONCIDIUMS.—The autumn-flowering section of this genus will be making new growths, and any that need repotting or top-dressing should be seen to as soon as the young roots commence to push from the base. A mixture of Osmunda fibre, leaves and moss, in equal parts, with plenty of crushed crocks to keep it porous, will suit them. In potting, keep the leading bulb on a level with the rim of the pot, and if a few of the old bulbs have to be buried, put a few crocks round them to prevent them rotting before the young growth gets hold of the new material. Plants that only need top-dressing should be picked out and neatly topped up, and it is better to keep them separate from the potted plants when staging, as then no mistakes in watering will occur. With few exceptions Oncidiums do well in a temperature of 55° to 60°, and do not need shading so heavily as Odontoglossums. They do well in a vinery or peach house, especially a lean-to house, where a shelf can be set apart for them, as the moisture and air required in such houses seems to just suit them.

Oncidium Kramerianum, the well-known Butterfly Orchid, *O. Cavendishianum*, and *O. Lanceanum*, will do better in a stove temperature all the year round. The Butterfly Orchid is a very interesting species to grow, and if there are four or six plants in a collection the flowers can be had throughout the year, and the spikes need not be left on long enough to injure the plants. The spring-flowering varieties that are pushing up spikes should be kept as near the glass as possible. *O. macranthum* and other species which make very long spikes, can have their spikes trained along the roof, and only tied to long stakes when the flowers are bursting. They make a beautiful show of bloom for the conservatory. *O. Marshallianum* and *O. sarcodes* are two fine varieties for spring flowering.

LÆLIA ANCEPS will also be commencing to grow and root, and if repotting or top-dressing is required the matter should be attended to without delay, so as to give them a long growing season. They make harder bulbs when grown cool. As a rule they will not need fire heat after May until the autumn. The autumn-flowering hybrids seem to be replacing them in many collections, as they are easier to grow; still these do not throw spikes like *L. anceps*, and I do not think the latter are beaten in beauty yet. The general complaint against *L. anceps* is that it will not stand fogs, but it does well here, and flowers well without any special attention, while the flowers also stand well, though it is a very foggy district in winter. We are just about half way between St. Helens and Widnes, both chemical manufacturing towns, and it would take a good London fog to beat some of ours both in flavour and density. When it clears off, our greenhouse roofs look more like slate than glass. If the mixture previously advised for *Cattleyas*, without leaves, is used for *L. anceps*, the flowers come much stronger than when potted in a soft growing mixture. The plants should be staged near the glass in an airy position, and very little shade is needed for them, only just enough to keep the leaves from scorching on a very hot day.

IMPORTED ORCHIDS.—There have recently been large importations of Orchids, and doubtless some of the plants have gone to nearly every collection in the country. When newly imported plants are received they should be thoroughly cleaned, and as soon as possible potted, as I find that by potting they are easily handled, and when they commence to root they do not need disturbing again. If kept shaded for a short time they soon make roots, and when they are well established they can receive the same treatment as the older plants. In potting imported plants it is better to give rather more drainage than is used for established plants, and smaller pots, as if a plant gets pot-bound it is easily dropped into a larger size without interfering with its growth. Clean pots should always be used, and where large quantities of pots are used a pot-washing machine will be found

very useful, as it saves time—and there is not much time to spare just now—and washes pots cleaner than when done by hand. It also makes the boy think he is a bit of an engineer as well as a pot washer, and a boy can wash several hundred, according to size, in half a day.

DENDROBIUMS, as they pass out of flower, will need going through for potting and top-dressing. It is best to do a few at a time, as they pass out of bloom, and then one can easily keep pace with them, and they do not get left till “next year,” which is often the case when they are left to be done in bulk, especially in a place where an Orchid staff is not kept, and other work comes along which also has to be done. The *Cattleya* mixture suits them well. Pot firmly and do not overpot them, as they like plenty of water in the growing season. A nice sunny position should be set aside for them, and if possible a house to themselves, otherwise the *Cattleya* house or some such position will suit them. They are not particular so long as they get plenty of sun, so that they can ripen as they grow, which is much better for them than the winter drought so much practised. Like *Lælia anceps*, *Dendrobies* do not seem to be such favourites as they were a few years ago, still for quantity of flowers and grouping there is nothing to beat them for spring flowering yet, as they last in flower such a long time without injury to the plants, and are very little trouble to grow. Red spider is about the only thing that seems to bother them, and if they are fumigated occasionally that need not happen, especially just after they commence to grow, when they have been grouped for effect for some time, and have not perhaps received the best of attention.

ODONTOGLOSSUMS will be coming into flower rapidly. As the days get brighter the house should be kept a little drier while the flowers are opening, unless one has a spare house where they can be staged until the flowering season is over. The spikes should not be left on long enough to shrivel the bulbs. *Odontoglossum grande* will be growing strongly, and should have a nice sunny position, and plenty of water during the growing season. This variety does better in an intermediate temperature than with *O. crispum*, and they are not so liable to spot when grown in a warmer house.

SEEDLINGS will need plenty of moisture now that the sun is getting stronger, and must be well shaded. A movable shade is best, so as to give as much light as possible in the evening and dull days. As soon as the pots are filled with roots they should be shifted into slightly larger pots, so as to keep them growing until they get to the flowering stage, when they can be treated as the other flowered plants.

CALANTHES should be potted as soon as they commence to grow. When stored in boxes on a shelf after flowering they can be left till the growth sends out roots, and if carefully handled when potted, they soon

root into the new compost. They can either be potted singly or, if specimen pots are required, several in a pot, and when well grown they are very effective when dotted about the conservatory. They like a mixture of loam, dried cow-manure, and peat, with plenty of drainage, so that they can be freely watered in their flowering season. If there is not much room for them in the Orchid houses, they will grow well in a Melon or Stove house. Care must be taken not to over-water them until they get well established, or black spots will soon appear on the young growths.

TEMPERATURES can be raised 5° to 10° all round now, as the outside conditions improve, and air be given on all favourable occasions, if only for an hour, so as to change the air in the houses, and prevent them from becoming stagnant with the extra moisture required.

DAMPING can be done several times daily, to keep a nice growing atmosphere, especially on a hot day, when the ventilators are open and moisture soon escapes.

SHADING must be carefully watched, as plants soon scald after the dull winter months, and a scalded plant is an eyesore for several years. Unfortunately, Orchids cannot be propagated as quickly as geraniums, and the grower is reminded of carelessness every time he sees a scalded leaf.

NOTICE OF BOOK.

Orchidaceæ. Illustrations and Studies of the Family Orchidaceæ issuing from the Ames Botanical Laboratory, North Easton, Massachusetts. By Oakes Ames, A. M., F. L. S. Fascicle II., pp. 288, with 9 plates and numerous figures. Houghton, Mifflin & Co., Boston and New York.

The second fascicle of this interesting work has just appeared, and contains an important paper entitled "Studies in the Orchid Flora of the Philippines," in which a large number of new species are described. The plates illustrate the following:—*Dendrobium acuminatum*, Rolfe, *Bulbophyllum lasioglossum*, Rolfe, *B. Copelandii*, Ames, and eighteen species of *Dendrochilum*, all natives of the Philippines, with the North American *Spiranthes longilabris*, Lindl., and *Hormidium tripterum*, Cogn., a widely-diffused Tropical American species. There is also a short paper on "New Species and Names of American Orchidaceæ," in which several new species of *Pleurothallis*, two *Masdevallias*, and a few others are described. The work concludes with a complete Index to this and the preceding fascicle.

ALBINISM IN *PAPHIOPEDILUM INSIGNE*.—Mr. J. H. Grogan writes:—Have we a true albinio of this species? I have never seen one. *C. insigne* Sanderæ has a minute trace of purple in the dorsal sepal, and *C. i. Sanderianum*, though without any perceptible colour in the flower, has a decidedly coloured flower-stalk.

ORCHIDS IN SEASON.

SEVERAL beautiful Orchids are sent from the collection of G. Hamilton Smith, Esq., of Finchley, by Mr. Coningsby. A flower of *Odontoglossum* $\times$ *Wilckeanum* is excellent in shape, and very richly blotched with deep chestnut brown on a light yellow ground. The petals are broad and very strongly toothed. It was purchased at the sale of the late Sir F. Wigan's collection, when quite a small plant, and, according to the label in the pot, it came from Messrs. Sander in 1903. A very pretty *O. Rossii rubescens* came as an imported plant last year, and is now carrying sixteen fine flowers. All the bulbs in the clump are said to be very small. There is also a good *O. \times Adrianæ* with light yellow ground, the chaste *Dendrobium nobile virginale*, and a brightly-coloured form of *Cattleya Trianæ*.

An eight-flowered spike of the handsome *Saccolabium bellinum* is sent from the collection of G. W. Jessop, Esq., Rawdon, Leeds, by Mr. Wilkinson, together with a very deep yellow *Dendrobium*, having a velvety disc to the lip, which is reddish maroon in colour. It has the fragrance of *D. aureum*, and we believe is descended from that species and *D. signatum*, and is thus a form of *D. \times Ophir*. It is very richly coloured.

A very fine form of *Paphiopedilum \times Parkerianum* ($\times$ *nitens \times Boxallii*) is sent from the collection of O. O. Wrigley, Esq., Bridge Hall, Bury, by Mr. Rogers. The dorsal sepal has a bright green disc, blotched with dark brown, and a very broad white margin, on which occur many small purple spots. The petals are nearly horizontal, and much like *P. \times nitens* in colour. The flower has been expanded thirteen weeks, and is apparently as fresh as ever.

Odontoglossum \times armainvillierense var. *Peetersii* is a very handsome variety sent by M. A. A. Peeters, of Brussels, who remarks that it was raised from *O. Pescatorei* fertilised by *O. crispum Stanleyi*, and that he considers it to be the finest raised up to date. It has very broad segments, the greater part of which is taken up by one immense maroon-purple blotch, only slightly broken by a little white on the petals. The apex of the lip and margins of the other segments are white. It is a small plant now flowering for the first time, and is certainly a great beauty.

A flower and leaf of a handsome seedling *Paphiopedilum* are sent from the collection of Mrs. Ross, of Florence. *P. \times euryandrum* is said to be one parent, but the other is doubtful. The peduncle is said to be three-flowered, and the leaf is broad and handsomely marbled. From the acute, closely-lined dorsal sepal, and the shape and colour of the lip and petals, we should suggest *P. Rothschildianum* as the other parent.

A photograph and flower of a *Phaius* are sent from the collection of T. H. Jenkin, Esq., Fernleigh, Goole. It was brought home three years ago

with other plants, by a friend, the captain of a steamer trading with the East, and proves to be *Phaius Blumei*, of which *Phaius grandifolius* is sometimes considered a variety. That the sepals and petals should be yellowish-brown in front and invariably white behind is a curious character which often invites remark.

Several good forms of *Dendrobium nobile* are sent from the collection of Walter Scott, Esq., Crieff Villa, Craghead, Durham, out of an importation purchased in 1906. They show the usual amount of variation, and three of them are selected as being above the average. One is a fine light form, and another very richly coloured, while the third is fairly typical in this respect.

Other beautiful *Dendrobiums* are sent from the collection of H. Nye, Esq., Broadwater Manor, Worthing, by Mr. Bailey, including *D. × Cybele elegans*, *D. × Blackianum*, *D. × Rainbow*, *D. nobile elegans*, *D. n. nobilius*, and what we take to be two forms of the variable *D. × melanodiscus*, one having pedicels fully three inches long. Mr. Bailey remarks that *Dendrobes* do very well there, and are found most useful in keeping a good show of flowers during the first three months of the year.

HYBRIDISING WITH STORED POLLEN.

IN an article at page 35 Dr. Otto N. Witt raises the question of hybridising with stored pollen. Here we keep pollen frequently for *many* months with satisfactory results. A good method is to take a very small glass test tube, about an inch and a quarter long, then heat it in a spirit lamp flame to sterilise it. Next (as soon as cool enough) insert the pollen, placing it at the extreme end. All that is then required is to heat the open end, and as the glass softens, draw it up and completely seal the tube. Glass being a non-conductor, the heat does not conduct down to the end where the pollen is, and no injury results. When pollen is required for pollinating, the tube being of extremely thin glass is easily broken and the pollen extracted.

Oakwood, Wylam-on-Tyne.

N. C. COOKSON.

I was much interested in the remarks respecting "stored pollen" in recent issues of the *Orchid Review*. I have tried many ways of keeping pollen, and amongst them the keeping of flowers in water in a cellar, as suggested by Argus at page 65, but it was not satisfactory, the flowers getting damp and mouldy. A better plan seems to be to put the flowers in a cool room, in a receptacle *without any water*. They gradually shrivel up, but keep quite *dry*, and the pollen remains perfectly good for weeks. I do not know yet how long it will keep, but have used it satisfactorily after a month. By the wonderful provision of nature the pollen always seems the last part of the flower to perish.

We have kept pollen in blue paper in gelatine capsules for $3\frac{1}{2}$ months, and then got a pod of seeds and raised seedlings from it, and if we can keep it for weeks on the dry flowers *first*, and then pack it away, it will considerably prolong the period of storage, and help in obtaining hybrids one might not be able to get otherwise. Referring to the letter of Dr. Otto N. Witt at page 35, I wish to say that we do not find any difference in the seedlings raised from stored pollen. The *Lælia purpurata* × *Cattleya Percivaliana* seedlings, mentioned in my note of October, 1903 (*O.R.* xi. p. 292), where the *C. Percivaliana* pollen was eleven weeks old before being used, are very strong healthy plants, and so with others. I quite agree with Argus that if the pollen, after storage, is able to retain sufficient vitality to produce pollen tubes and fertilise the ovules, there is no need for the resultant seedlings to be weak or unhealthy.

EMILY THWAITES.

Streatham.

CYNORCHIS.

It is well-known that several species of *Cynorchis* are very successfully cultivated at Kew, where also the pretty little *C. × kewensis* was raised from *C. Lowiana* ♀ and *C. purpurascens* ♂. A good example of *C. Lowiana* was figured at page 121 of our last volume, and *C. purpurascens* at page 305 of the previous one. A good specimen of *C. Lowiana* has just been figured in the *Gardener's Chronicle* (1908, i. p. 184, suppl. fig.), where the following note on their culture appears:—"At Kew the plants are rested from the end of December until the beginning of May, when they are turned out of their pots, the old compost carefully removed from the fleshy roots, and repotted in a mixture of equal proportions of peat, chopped sphagnum-moss, and Orchid leaf-soil, with the addition of a little sand and charcoal. They are then placed in a moist atmosphere, having a temperature of 60° to 65° Fahr. by day and 55° at night. They are watered with rain water exclusively, and they produce bright green leaves and an abundance of flowers."

DENDROBIUM × DELICATUM.

THE origin of *Dendrobium delicatum*, Bailey, whose history was given at page 88, can now be cleared up. Sir Trevor Lawrence has sent to Kew an inflorescence of the hybrid raised by the late Mr. Spyers from *D. speciosum* ♀ and *D. Kingianum* ♂, and which flowered for the first time some sixteen years ago (*G.C.* 1892, i. p. 409), and it agrees so well with the wild plant that no further description is necessary. *D. delicatum* must therefore be deleted from the list of "species." It is interesting to have the matter cleared up, and there is a moral here which systematists should take to heart.

R.A.R.

LYCASTE SKINNERI AT BRIDGE HALL, BURY.

WE have received from the collection of O. O. Wrigley, Esq., Bridge Hall, Bury (gr. Mr. Rogers), a series of fifteen most beautiful varieties of *Lycaste Skinneri*. Mr. Wrigley writes: "We have had these lovely blooms in flower since we came back from our Windermere house, and they have



Fig. 19. *LYCASTE SKINNERI ALBA*.

supplied a great quantity of cut bloom, for room and table decoration; indeed, they have almost outdone the *Cypripedes*, of which we have a good supply as yet. These two lovely Orchids are our mainstay for cut blooms during about six months in the year. I wish to draw your attention to one plant of *L. Skinneri alba*, which I purchased in 1902 from Messrs. Pauwels, Ghent. The plant consisted of four pseudobulbs, and two of these were

removed, and both of them broke and are now fine plants, carrying many flowers this season. The main portion of the plant produced eight blooms last year, and then broke double, producing two very fine pseudobulbs, which this year have borne a number of flowers—the smaller twelve and the larger nineteen very fine blooms, making a total of thirty-one, which I fancy is a record number of flowers produced by one single plant. I enclose a photograph of this plant, which has been taken by my daughter, and gives a very good idea of its character.” We have much pleasure in reproducing the photograph of this beautiful specimen, and congratulate Mr. Wrigley and his able gardener on such successful culture.

The range of variation shown by this fine species is remarkable, and is well illustrated by the series sent. A flower of the form figured, *L. S. alba*, is splendidly developed, and of the purest white, with the usual light yellow crest. *L. S. Rainbow* has the petals prettily stained with light rosy-purple, except at the apex, which is white, also the lip, while the sepals are light blush pink. A third has blush pink sepals and petals, the latter suffused and lined to the apex with rose, and the lip white, while another has deep rose-purple petals, a pure white lip, and blush sepals and petals, forming a very striking contrast. In another variety it is the lip which is deep rose-purple, while the petals are much lighter, and the sepals blush white. Two others have the sepals nearly white, and the petals stained and the lip marbled with a rather darker shade, while contrasting with these are two dark forms, having blush-pink sepals, rosy petals, and the lip variously marked and spotted with deep crimson. The others are more or less intermediate. The flowers stand well in water, and their pure colours come out well under artificial light. Such a series shows what this fine old Orchid is capable of when well-grown, and we can give no better example of this than the plant figured.

SOCIETIES.

ROYAL HORTICULTURAL.

A MEETING of the Royal Horticultural Society was held at the Royal Horticultural Hall, Vincent Square, Westminster, on March 3rd, when there was a remarkably fine display of Orchids, one of the best yet seen in the Hall, including two superb groups which gained the Society's Gold Medal. Eight other medals were also awarded to groups, together with three First-class Certificates, seven Awards of Merit, and two Cultural Commendations.

Sir Jeremiah Colman, Bart., Gatton Park, Reigate (gr. Mr. Bound), staged a superb group, alike for quality and arrangement, to which a Gold Medal was awarded. It contained a very fine series of *Dendrobiums*, many of them hybrids raised in the collection, and all splendidly grown and

flowered ; together with some good Lælio-cattleyas. *Phalenopsis amabilis*, *Cattleya Trianæ*, *Epidendrum* × *Boundii*, a nice lot of *Calanthe Regnieri*, *Masdevallias*, *Epiphronitis Veitchii*, *Sophronitis grandiflora*, *Odontoglossum Edwardii*, and numerous other fine things. Others particularly noted were the handsome *Spathoglottis* × *Colmanii*, *S. aurea*, the bright rose *Pleione yunnanensis*, *Cymbidium* × *Lady Colman*, *C.* × *gattonense*, and *C. grandiflorum*, all in very fine condition, *Miltonia Warscewiczii*, the dwarf *Angræcum hyaloides*, profusely flowered, the gnat-like *Pleurothallis macroblepharis*, *Phaiocalanthe* × *Colmanii*, a mass of *Epidendrum polybulbon*, *Bulbophyllum suavissimum*, and the dwarf *B. Shepherdii*, *Brassavola nodosa*, *Diacattleya* × *Colmaniæ*, and *Epidiacrium* × *Colmanii*, a very interesting generic hybrid between *Diacrium bicornutum* and *Epidendrum ciliare*. The *Dendrobiums* included the rare *D. Hodgkinsoni*, *D. nobile virginale*, *D.* × *Othello Colossus*, *D.* × *Mrs. Alfred Rogers* (*Hildebrandii* × *Findlayanum*), *D. signatum*, some fine *D.* × *Wiganiaë*, *D. Wardianum album*, and others too numerous to mention. A First-class Certificate was given to *D.* × *Cybele*, Gatton Park var. (*nobile nobilius* × *Findlayanum*) a superb form, having broad segments tipped with rose-purple, and some orange round the dark maroon disc; and an Award of Merit to *D.* × *chessingtonense*, Gatton Park var., a rich deep yellow form, with a reddish maroon disc to the lip.

Major G. L. Holford, Westonbirt, Tetbury (gr. Mr. Alexander), also received a Gold Medal for a large and brilliant group of well-grown and effectively arranged plants, which cannot be done justice to in the space at our disposal. The Lælio-cattleyas were most excellent, and included about seventy plants of L.-c. *Ariel* (*L. Cowanii* × *C. Dowiana aurea*), which were divided into two banks of distinct colour, one having the sepals and petals copper-red, the other deep yellow, with very few intermediate shades. The lip is very richly coloured. There were also forms of L.-c. *Goldfinch* (*L.-c. warnhamensis* × *C. Dowiana*), L.-c. *Aladdin* (*C. Warscewiczii* × *L.-c. Ingramii*), L.-c. *Arbaces* (*C. labiata* × *L.-c. Cassiope*), L.-c. *Barbarossa*, L.-c. *Dorothy* (*C. Schroederæ* × *L.-c. Doris*), several handsome *Brassocattleyas*, two plants of the brilliant little *Sophrœlælia Psyche*, one bearing four racemes, some superb, named varieties of *Cattleya Trianæ*, in the finest possible condition, the beautiful white *C. chocoensis* Westfield var., *Dendrobium* × *Perseus* (*nobile* × *Wiganiaë xanthochilum*), *D.* × *Psyche* (*Cassiope* × *Wiganiaë xanthochilum*), and other handsome and profusely-flowered *Dendrobiums*, *Lycaste* × *Balliaë* var. *Mary Gratrix*, with seven fine flowers, some beautiful *Odontoglossums*, &c. A Cultural Commendation was given to a very fine specimen of *Odontoglossum* × *loochristiense*, bearing four spikes, with an aggregate of 56 flowers, and an Award of Merit to L.-c. × *Pizarro* (*L.*

Jongheana × *C. Dowiana aurea*), having bright rose-purple sepals and petals, most like the former in shape, and an orange-coloured lip with some purple markings.

N. C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. Chapman), received a Silver-gilt Flora Medal for a very fine group of *Odontoglossums*, including the beautiful varieties *O. crispum Pittianum*, Mrs. Peeters, *tesselatum*, *Mossiæ*, *memoria Battle of Waterloo*, and *St. Alban*, the latter with a finely-branched spike of 28 flowers, and various other species and hybrids. There were also some home-raised seedlings of great interest, including *O. c. Chapmaniæ*, a sturdy little plant flowering on the first bulb when only two years old. It bore two well-shaped flowers, tinged with rose, and handsomely blotched, and will evidently develop into a fine thing.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan), received a Silver Flora Medal for a choice group, including some good forms of *Odontoglossum crispum*, *triumphans*, *Pescatorei*, × *Adrianæ*, &c., a good plant of *Ansellia confusa* with two large panicles, *Lælio-cattleya Amelia*, L.-c. *Ernestii*, L.-c. *Adelina* (*cinnabarina* × *Percivaliana*), and several others.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. Day), received a Silver Banksian Medal for a good group, including *Oncidium splendidum*, *Sophrolælia Psyche*, a good *Miltonia* × *Bleuana*, *Platyclinis glumacea*, *Lycaste Skinneri*, *Dendrobiums*, &c.

Walter Cobb, Esq., Normanhurst, Rusper (gr. Mr. Howes), received a Cultural Commendation and an Award of Merit for a remarkably well-grown specimen of *Maxillaria luteo-alba*, bearing seventy flowers, which formed a complete wreath round the plant.

J. Bradshaw, Esq., The Grange, Southgate (gr. Mr. Whitelegge), showed *Lycaste Skinneri* *Princess Ida*, a beautiful light-coloured variety, *Cattleya Lueddemanniana alba*, var. *Empress*, and *C. L. regia*, a fine white variety with rich purple veining on the lip in front of the yellow disc.

H. J. Elwes, Esq., Colesborne, Andoversford, sent two pretty varieties of *Pleione yunnanensis*, and two hybrid *Cypripediums* of unrecorded parentage.

M. Jules Hye de Crom, Ghent (gr. M. Coen), sent four beautiful cut racemes of *Cattleya* × *Suzanne Hye de Crom* (*Mossiæ Wageneri* × *Gaskelliana alba*), bearing an aggregate of thirteen flowers, of the purest white, with the usual yellow disc to the lip.

C. L. N. Ingram, Esq., Elstead House, Godalming (gr. Mr. Bond), sent cut blooms of three fine *Lælio-cattleya Dominiana elsteadensis*.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), sent the handsome *Zygopetalum* × *Ballii magnificum*, and the curious little *Maxillaria variabilis* var. *unipunctata*.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), showed *Cattleya* × *parisiensis*, said to be from *C. Dowiana aurea* × *Parthenia*, and having pale lilac flowers, with some purple veining in front of the yellow disc of the lip, but the *Dowiana* character was not very obvious.

R. Brooman-White, Esq., Arddarroch, Garelochhead, sent cut spikes of *Odontoglossum* × *Wilckeanum*, and some good *O. crispum*, with the beautiful *O. c. xanthotes*.

Messrs. Charlesworth & Co., Heaton, Bradford, received a Silver Flora Medal for a remarkably fine group, the centre of which was chiefly composed of the brilliant *Lælio-cattleya Hypatia*, and some good *Cattleya Trianæ*. We noted also a fine example of *Eulophiella Elisabethæ*, *Cymbidium* × *Woodhamsianum*, the brilliant *Odontioda Vuylstekeæ*, *O. Lutetia* (*C. Nøetzeliana* × *O. luteopurpureum*), the graceful *Angraecum citratum*, *Odontoglossum* × *mulus*, *O.* × *Ossultoni*, *O.* × *Eleanor* (*cirrhosum* × *Uroskinnei*), the charming *O.* × *Phœbe*, a very fine example of *Brassocattleya Queen Alexandra*, &c. Awards of Merit were given to *Sophrolælia Felicia* (*L. pumila præstans* × *S.-l. heatonensis*), a very light purple flower with darker lip, and to *Odontoglossum* × *Clytie* (*Edwardii* × *Pescatorei*), a very effective hybrid, bearing a branched spike of rosy-lilac flowers, heavily blotched with claret purple.

Messrs. Cypher & Sons, Cheltenham, also received a Silver Flora Medal for a very fine group, including many excellent forms of *Cattleya Trianæ*, some well-grown *Dendrobiums*, *Odontoglossums* and *Cypripediums*, with a fine series of *Sophronitis grandiflora* in front. Among interesting things we noticed a fine *Odontoglossum* × *Wiganianum*, *O.* × *mulus*, some good *O. crispum*, *Brassavola Digbyana*, *Cypripedium* × *Venus*, *Lælia Jongheana*, *Dendrobium* × *Wiganiaë xanthochilum*, *Brassocattleya Thorntonii*, and others.

Messrs. Sander and Sons, St. Albans, received a Silver Banksian Medal for a choice little group, including the handsome *Odontonia Lairesseæ*, *Cattleya Trianæ triumphans*, *Cypripedium* × *Orion* var. *aureum* (*insigne Sanderæ* × *concolor*), a pretty yellow flower spotted with purple, a good *C. Curtisii*, *Epidendrum Wallisii*, *Saccolabium calceolare*, *Vanda suavis*, a good plant of *Cœlia Baueriana*, *Bulbophyllum suavissimum*, *Phaius maculatus*, &c. First-class Certificates were given to *Cymbidium insigne superbum*, having blush white sepals and petals, and the lip heavily spotted with deep rose-purple, and to *C. i. splendens*, having pink sepals and petals, with a distinct darker line, and the lip very heavily spotted with purple-crimson.

Messrs. Armstrong & Brown, Tunbridge Wells, received a Silver Banksian Medal for a fine group, including some good *Sophronitis grandiflora*, *Odontoglossum* × *mulus*, *O. crispum*, and others, *Lælia* × *Statheræ*,

several forms of a variable and pretty little *Læliocattleya* derived from *C. Trianæ* × *L. Cowanii*, and having yellow or salmon-coloured sepals and petals, with rich purple on the margins of the lip, the bright yellow *Oncidium Lucasianum*, *Cypripedium* × *Helen II.* and its variety *Armstrongiæ* (figured on another page), *C. Fairrieanum*, *C. × Mary Beatrice*, *C. × Braceyanum* (*superbiens* × *Lord Derby*), *C. Victoria-Mariæ* × *insigne Sanderæ*, having greenish yellow flowers spotted with brown on the dorsal sepal, &c. An Award of Merit was given to *Lælio-cattleya Daffodil* (*L.-c. Mercia* × *L. Jongheana alba*), a charming little hybrid, having broad cream yellow sepals and petals, and a rich yellow lip.

Messrs. Hugh Low & Co., Enfield, received a Silver Banksian Medal for a bright and pretty group, including some good *Dendrobiums*, noteworthy among them being several of the chaste *D. n. virginale*, a fine *Pleurothallis Roezlii* with five racemes, *Cymbidium* × *Wiganianum*, *C. × Ballianum*, a dark *Odontoglossum cordatum*, *O. crispum Carmen*, a very fine and handsomely-blotched form, some good *Cypripediums*, and *Sophronitis Lowii*, most like a small deep yellow form of *S. grandiflora*.

M. Mertens, Mont-St.-Amand, Ghent, also received a Silver Banksian Medal for a pretty group of hybrid *Odontoglossums*, *Cattleya Trianæ*, *Cypripediums*, &c.

M. Ch. Maron, Brunoy, France, received an Award of Merit for *Brassocattleya Helen Maron* (*B.-c. × Imperatrice de Russie* × unknown), having large pale lilac flowers, with some purple markings at the base of the lip.

Messrs. Heath & Sons, Cheltenham, staged a small group of *Cattleyas*, *Cypripediums*, *Dendrobium Wardianum*, *Cymbidium elegans*, &c.

Messrs. Stanley & Co., Southgate, staged a small group of *Dendrobium primulinum*, *D. crassinode*, *Cattleyas*, *Oncidiums*, *Eria stricta*, &c.

Miss West, Southfield-road, Tunbridge Wells, exhibited a few framed coloured paintings of Orchids.

At the meeting held on March 17th there was again a very fine display of Orchids, and the awards consisted of ten Medals, two First-class Certificates, four Awards of Merit, two Botanical Certificates, and three Cultural Commendations.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), staged a very fine group of specimen plants, which gained a Silver-gilt Flora Medal. It included the handsome *Brassocattleya Digbyano-Mendelii*, *B.-c. Madame Hye*, *Odontoglossum* × *Andersonianum*, *Westonbirt* var., *O. crispum Rosemary*, *O. c. Egret*, *O. c. Westonbirt* var., *Læliocattleya Dorothy*, a bright yellow hybrid, *L.-c. Earl Grey*, rose-purple with claret-purple lip, the pretty little *Sophrocattlælia Danæ*, some fine *Dendrobiums*, including *D. × Perseus*, *D. × P. aureum*, *D. × Melpomene*, *D. ×*

Magda, and others. An Award of Merit was given to *Laluncattleya luminosa*, Westonbirt var., an extremely fine form, having Indian yellow sepals and petals, tinged with red, and a dark claret-purple lip, and a Cultural Commendation to *Odontoglossum* × *Adriana* var. *Lady Wantage*, a noble example having an inflorescence $4\frac{1}{2}$ feet long, with thirteen side branches and over one hundred flowers, while *Cattleya* *Enid*, Westonbirt var., bearing a strong inflorescence of six flowers, gained both an Award of Merit and a Cultural Commendation.

J. Bradshaw, Esq., The Grange, Southgate (gr. Mr. Whitelegge), also gained a Silver-gilt Medal for a large and very handsome group, the centre of which consisted of white forms of *Cattleya Trianae*, bearing about sixty blooms. *C. T. alba* and Mrs. Edward Sondheim were pure white, *Esmeralda* had a slight pink tinge on the lip, and *Prima Donna* a purple feather in front. There were also some brilliantly-coloured forms of the species, good white and coloured forms of *Lycaste Skinneri*, *L. × Balhae*, a fine series of *Odontoglossums*, &c.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. Day), received a Silver Flora Medal for a fine group, including a good *Angræcum Sanderianum* with three spikes, *Miltonia Phalænopsis*, a splendid form of *Odontoglossum* × *Wiganianum*, the handsomely blotched *O. crispum* *Lily Bourdas*, with other good forms of the species, *O. × Hallio-crispum*, and other good things.

M. Jules Hye de Crom, Coupure, Ghent (gr. M. Coen), received a First-class Certificate for *Cattleya* × *Susanne Hye de Crem* (*Mossiaë Wageri* × *Gaskelliana alba*), a beautiful albino of which cut flowers were exhibited at the last meeting.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), received a Cultural Commendation for a fine specimen of *Brassocattleya Lindleyana* with over fifty flowers.

F. Menteth Ogilvie, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), received a Silver Banksian Medal for a good group, containing some well-grown *Odontoglossum crispum*, *triumphans*, × *Rolfæ*, × *Wilckeanum*, × *Adrianæ*, and others, also *Cypripedium* × *Bridger* var. *grandiflorum*, with its two parents, *C. Argus Moensii* and *C. × Godseffianum*, and others.

Sir Jeremiah Colman, Bart., Gatton Park, Reigate (gr. Mr. Bound), staged a choice little group, including the striking *Epidiacrum Colmanii* with a spike of four flowers, nine distinct forms of *Dendrobium* × *Thwaitesiæ*, all out of the same batch of seedlings, the pretty *D. × Mrs. Alfred Rogers*, *D. × Rolfeæ roseum*, and a very similar form raised from *D. × Wiganianum* × *D. Linawianum*.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), sent three pretty hybrid *Odontoglossums*. *O. × waltonense* (*Kegeijani* ×

crispum), *O.* × *Electra* (× *Andersonianum* × *triumphans*), and *O.* × *Carmen* (*crispum* × *Crawshayanum*).

Messrs. J. Cypher & Sons, Cheltenham, staged a handsome group, which gained a Silver Flora Medal. It contained a fine series of *Dendrobiums*, *Odontoglossums*, *Cypripediums*, the brilliant little *Sophronitis grandiflora*, *Epiphronitis Veitchii*, &c., noteworthy among them being *Odontoglossum blandum*, a finely-blotched *O.* × *ardentissimum*, *Cypripedium* × *Beekmanii*, *C.* × *Mons. de Curte*, and others.

Messrs. Hugh Low & Co., Enfield, received a Silver Flora Medal for a good group, including the handsome *Cattleya Schröderæ enfieldensis*, a bright rosy form with violet-purple lip, *C. Trianæ plumosa*, a form of *C. Percivaliana* with blush white sepals and petals and a very dark lip, *Cypripedium* × *Mrs. William Mostyn*, *C. insigne* E. J. Seymour, *C. i. McNabianum*, and others.

Messrs. J. & A. A. McBean, Cooksbridge, received a Silver Flora Medal for a fine group of well-grown and flowered *Odontoglossum crispum*, one of which bore a branched spike of 52 good flowers. Both the white and rosy types were well represented, also a number of handsomely blotched forms, including *O. c.* *King Richard*, *O. c.* *xanthotes*, *O. c.* *Oakfield Sunrise*, and others.

M. Th. Pauwels, Ghent, received a First-class Certificate for *Vanda suavis pallida*, a beautiful albino, having obscurely spotted whitish flowers, tinged with pale green.

Messrs. Moore, Ltd., Rawdon, Leeds, received a Silver Banksian Medal for a very interesting group, including *Dendrobium nobile virginale*, and other forms of *D. nobile*, the mossy-peduncled *D. macrophyllum*, some good *Cattleya Schröderæ*, and numerous hybrids. A Botanical Certificate was given to *Dendrobium fusiforme*, a rare Australian species, allied to *D. speciosum*, whose history was given at p. 136 of our last volume.

Messrs. Sander & Sons, St. Albans, received a Silver Banksian Medal for a choice group, including the handsome *Odontonia Lairesseæ*, the beautiful *Lælio-cattleya Kerchovæ*, *L. c.* *luminosa*, some good *Cattleya Schröderæ*, *Epidendrum Wallisii* and some of its hybrids, a white form of *E. evectum*, *Cœlogyne Lawrenceana*, *Promenæa xanthina*, *Cypripedium Rothschildianum*, and others, the pretty *Cynorchis* × *kewensis*, several interesting species of *Ophrys*, &c.

Messrs. Charlesworth & Co., Heaton, Bradford, received Awards of Merit for *Lælio-cattleya Elinor* (*L.* × *Coronet* × *C. Schröderæ*), having deep orange-coloured flowers of good size and shape, and for *Odontoglossum* × *Gladys* (*cirrhosum* × *Harryanum*), a very charming hybrid, most like *cirrhosum* in shape, but larger, and having greenish white flowers blotched with dark purple. They also sent the fine *O.* × *ardentissimum xanthotes*,

with yellow markings on the lip, *O. × amabile*, the prettily-spotted *Odontioda heatonensis*, some fine examples of *Miltonia Warscewiczii*, and others.

Messrs. James Veitch & Sons, Chelsea, received a Botanical Certificate for the pretty little *Pleione yunnansis*, a Chinese species, which was figured at page 81 of our fourteenth volume.

Messrs. Heath & Son, Cheltenham, showed a pretty little group of *Dendrobium nobile*, *D. Wardianum*, *Cœlogyne cristata alba*, *Cypripediums*, *Epiphronitis Veitchii*, &c.

M. Mertens, Mont-St.-Amand, Ghent, sent a small group of *Cypripediums* and hybrid *Odontoglossums*.

The Report of the Scientific Committee on this date contains the following (with a note on Albinism which is included in an article devoted to that subject):—

DOMINANCE AND REVERSION IN DENDROBIUM CROSSES.—Gurney Wilson, Esq., of Glenthorne, Haywards Heath, showed pseudo-bulbs of a cross-bred *Dendrobium*, and of its parents, *D. nobile* Ballianum ♀ × *D. nobile murrhiniacum* ♂. The pseudo-bulb of *D. nobile* Ballianum is straight, while that of the other parent is zig-zag in growth, owing to the presence of a very marked projection at the nodes on each side of the pseudo-bulb alternately. Of 150 seedlings of this cross all showed in a marked manner in their pseudo-bulbs the zig-zag character of the pseudo-bulb of *D. nobile murrhiniacum*. In both parents the flowers are white, but have a faint purplish spot in the centre of the throat. In all the 150 cross-bred plants the flower has reverted to the typical colouration of the species, the spot in the centre of the throat being dark, and the other perianth pieces being marked with purple.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

At the meeting held at the Coal Exchange, Manchester, on March 5th. the following members of the Committee were present: Messrs. E. Ashworth (Chairman), R. Ashworth, Ward, Warburton, Cowan, Sander, Keeling, Shill, Ashton, Cypher, Leemann, Parker and Walmsley.

Mr. William Bolton, Wilderspool, showed *Cattleya Schroëderæ* Boltoni, a very distinct variety, having rosy-red sepals and petals, and a deep maroon purple lip with inner stripes of orange yellow, a quite unique form, (F.C.C.), also several good spotted *Odontoglossums*, and *O. crispum xanthotes*.

Messrs. Keeling & Sons, Bradford, showed *Masdevallia floribunda* and *M. Shuttleworthii*.

J. H. Craven, Esq., Keighley (gr. Mr. Corney) showed a nice little group, in which I noted a flower of *Cypripedium × Euryades* New Hall Hey var.,

with two perfect dorsal sepals on one flower. *C. villosum* var. *Colossus*, a fairly large flower, gained an Award of Merit (Bronze Medal for group).

Mr. D. McLeod, Chorlton-cum-Hardy, showed a few plants and cut flowers of excellent quality.

Ziba A. Ward, Esq., Northenden (gr. Mr. Weatherly), staged a very fine group of *Odontoglossums* in variety, splendidly grown and flowered, *O. × Rolfeæ*, *O. × Ossultoni*, and *O. × Elaine* being specially good. *O. Pescatorei*, Ward's var., gained a First-class Certificate, as did also *Cypripedium × aureum*. The whole made an effective group and gained a Silver Medal.

H. J. Bromilow, Esq., Rainhill (gr. Mr. Morgan), showed a good collection of *Cypripediums*, most of which have been noted before, and was awarded a Silver Medal.

Mr. W. Shackleton, Great Horton, Bradford, was awarded a Bronze Medal for a nice group of mixed plants, *Cypripediums*, *Odontoglossums*, &c.

Mr. J. Robson, Altrincham, showed a few good *Cypripediums*, and received a Vote of Thanks.

A. Warburton, Esq., Vine House, Haslingden (gr. Mr. Dalglish), put up a very fine group, which for Cup purposes was divided into two, and gained Silver and Silver-gilt Medals. *Cypripedium × Leeaenum*, Warburton's var., *C. × Sapho* var. *Duchess*, and *C. × Euryades* var. *Mikado*, all gained Awards of Merit. I noted a good *C. × Leeaenum Lavertonianum* and *C. × Olivia*, also many well grown plants of *Odontoglossum*, &c.

Messrs. Cypher & Son, Cheltenham, gained a Silver-gilt Medal for a fine group of mixed plants. I noted a good *Lælio-cattleya callistoglossa*, a fine *Cattleya Trianae* var. *General Gordon*, *Brassocattleya Thorntonii*, *Dendrochilum glumaceum*, &c.

J. McCartney, Esq., Hey House, Bolton (gr. Mr. Holmes), staged a fine lot of *Cattleyas*, of which *C. Trianae splendidissima* and *C. Trianae*, Hey House var., gained Awards of Merit. I noted also *C. T. alba*, a good *C. Schroederæ*, &c. The group was divided for the Cup competition, and gained two Silver Medals.

Ed. Rogerson, Esq., Didsbury (gr. Mr. Price), showed the beautiful *Odontoglossum × Rogersonianum*, a good blotched flower, *Dendrobium × melanodiscus*, *D. × Luna*, &c.

Messrs. Hugh Low & Co., Enfield, showed a good group of well-flowered *Dendrobiums*, of all the best varieties, *D. nobile virginale* and *D. n. Ballianum* being specially well flowered (Silver Medal).

S. Gratrix, Esq., Whalley Range (gr. Mr. Shill), showed a small group of excellent quality, which gained a Silver Medal. Awards of Merit were given to *Brassocattleya Thorntonii magnifica*, *Cypripedium × Orion* var. *aureum*, *C. × exquisitum* (*Godefroyæ × Mastersianum*), *C. × Crippsianum*,

Lady Wimborne's var., *Dendrobium* × *Wiganianum*, *Gratrix's* var., and *Odontoglossum* × *Wiganianum* (× *Wilekeanum* × *Rolfeae*).

Max Isaac, Esq., Blundellsands, Liverpool (gr. Mr. Driver), sent *Cattleya Trianae delicata*, the pretty little *Cypripedium concolor* *Sanderae*, and the beautiful albino *C.* × *Maudiae magnificum*, to the latter a First-class Certificate being confirmed.

At the meeting held on March 19th there was again a very good show of flowers, and the following members of the Committee were present: Messrs. E. Ashworth (Chairman), Leemann, Cypher, Ashton, Shill, Ball, Cowan, Ward, Walmsley, Warburton, Parker and Keeling.

S. Gratrix, Esq., Whalley Range (gr. Mr. Shill), showed a small group of first-rate quality. *Cattleya* × *Undine* (*intermedia alba* × *Mossiae Wageneri*), and *Odontoglossum* × *ardentissimum virginale* both received First-class Certificates, as did also *Dendrobium* × *chessingtonense* (*Wiganiae* × *splendidissimum*), a fine flower, with creamy white sepals and petals and rich crimson throat to the lip. *Cattleya Schroederæ* var. *Niobe* and *Odontoglossum crispum* var. *Harmony* received Awards of Merit.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a small group of mixed plants, which gained a Bronze Medal. I noted a beautiful *Odontoglossum* × *Gladys*, and a very fine *Cattleya* × *Empress Frederick*, also nice plants of *Epidendrum Wallisii* and *Miltonia Warscewiczii*.

Mr. Porritt received a Vote of Thanks for a small group of *Cypripediums*.

Messrs. Moore & Co., Rawdon, Leeds, received a Bronze Medal for a group of *Dendrobes*, in which I noted *D.* × *Wiganiae album*, *Epiphronitis Veitchii*, &c.

J. H. Craven, Esq., The Beeches, Keighley (gr. Mr. Corney), sent a small group of *Cypripediums*, including a nice plant of *C.* × *Gravesiae*.

R. Ashworth, Esq., Newchurch (gr. Mr. Fletcher), staged a nice group of mixed plants, chiefly *Odontoglossums*. I noted a beautiful unnamed hybrid (*crispum Augusta* × *Harryano-crispum*), *O.* × *Adrianæ*, *Brassocattleya Queen Alexandra*, *Miltonia* × *Bleuana*, &c. (Silver Medal).

Mr. D. McLeod, Chorlton-cum-Hardy, showed three or four good *Odontoglossum crispum*, and several cut flowers of the same of excellent quality.

H. J. Bromilow, Esq., Rainhill (gr. Mr. Morgan), showed a fine group of *Cypripediums*. *C. villosum*, Rann Lea var., a flower of good size and shape, received an Award of Merit, as did also *C.* × *Lemonianum* and *C. Godefroyæ*, while *C.* × *Wm. Lloyd* var. *magnificum* received a First-class Certificate. I also noted many previously certificated varieties (Silver-gilt Medal).

A. Warburton, Esq., Vine House, Haslingden (gr. Mr. Dalglish), staged a splendid group of plants, which for Cup competitions was divided into three, and was awarded two Silver Medals and one Silver-gilt Medal. The group was rich in new and good things, as the following awards will show. First-class Certificates were awarded to *Cypripedium* × *Stepmanii* superbum, *Cattleya Dormaniana*, very fine both in size and colour, and the lip intense purple-crimson, *Odontoglossum* × *ardentissimum* xanthotes, pure white with lemon blotch on lip, *O. crispum* Perfect Gem, well blotched and of good shape, *O.* × *Lambeauianum* var. Purple Gem, a well-shaped flower with a fine blotch on white ground, while Awards of Merit were given to *Cypripedium* × *Warburtonæ*, *C.* × *Ædippe* superbum, *Cattleya Schroederæ* var. Prunus, *C. S.* var. Goldem Gem, *C.* × *Miss Harris* var. E. Ashworth, *C.* × *Mont Blanc* (*Wavriniana alba* × *intermedia alba*), and *Odontoglossum crispum* Bachhouseæ. I noted a good seedling *Cypripedium* × *Floral Marguerite*. The group also contained many well-flowered *Cattleyas* and *Odontoglossums*.

Messrs. Cypher & Son, Cheltenham, showed a good group of all the leading *Dendrobiums*. I noted *D.* × *Apollo* album, *D. nobile* Dormanii, *D. n.* Ballianum, *D. n.* album, *D. n.* Statterianum, and numerous others (Silver Medal).

Ed. Rogerson, Esq., Oakdene, Didsbury (gr. Mr. Price), showed the beautiful *Odontoglossum crispum* Luciani and *O. c.* The Pearl.

J. McCarthy, Esq., Hey House, Bolton (gr. Mr. Holmes), showed a fine group of well-flowered *Cattleyas* *Trianae* and *Schroederæ*, backed with floriferous *Dendrobium Wardianum*. The group was divided for the cup competition, and gained two Silver Medals.

Ziba A. Ward, Esq., Northenden (gr. Mr. Weatherly), staged a splendid group of *Odontoglossums*, the long arching sprays with their many shades of colour making the group very effective. *O.* × *amabile*, Ward's var., a very rich flower, gained a First-class Certificate, while *O.* × *Rolfeæ*, Ward's var., *O.* × *ardentissimum*, Ward's var., and *Odontoda Bohnhoffiæ*, very highly coloured, each gained an Award of Merit. I noted several fine spikes of *Odontoglossum Hallii* and *O.* × *mulus*, and a nice *O.* × *Adrianæ* var. Fascinator, &c. (Silver Medal).

G. Shorland Ball, Esq., Burton, Westmorland (gr. Mr. Herdman), showed *Cypripedium* × *Leeanum* Adrian Lefebre, *C.* × *Alfred Dimmock*, *C.* × *Yellow Prince* (*villosum* × *nitens*), each gaining an Award of Merit. I noted a well-flowered *D. nobile* album and *D.* × *xanthocentrum*.

Dr. Hodgkinson, The Grange, Wilmslow (gr. Mr. Woore), gained a First-class Certificate for *Cymbidium Sanderi*. The plant carried two spikes, each with eight or nine flowers, and is a beautiful addition to the *Cymbidium* family.

H. T.

THE HYBRIDIST.

LÆLIA × *GROGANII*.—This is a very pretty little hybrid raised in the collection of J. H. Grogan, Esq., Slaney Park, Baltinglass, Co. Wicklow, from *Lælia flava* × *L. crispa*. The spike sent bears seven flowers, which have an expanse of four inches, on the whole most resembling a much enlarged edition of *L. flava* as regards shape. The colour is light yellow, with a considerable amount of the usual purple veining of *L. crispa* on the lip. Mr. Grogan remarks that it is a small seedling now flowering for the first time, and that he considers it an attractive little plant. It is probably not yet fully developed.

ODONTOGLOSSUM × *CLYTIE*.—A distinct and handsome hybrid, derived from *O. Edwardii* × *O. nobile* (*Pescatorei*), for which Messrs. Charlesworth & Co., Heaton, Bradford, received an Award of Merit at the R. H. S. meeting held on March 3rd last. It bore a large and gracefully-branched panicle of numerous flowers, most like those of *O. Edwardii* in shape, but considerably larger and much modified by the influence of *O. nobile*. The colour is lilac, with large dark purple blotches covering about half their area. The lip is pandurate, with an acute apex, the basal half bearing large purple blotches, and the crest bright yellow. The column wings are broad and minutely denticulate. A second crossing with *O. nobile* might yield something interesting.

ODONTOGLOSSUM × *ELEANOR*.—Another pretty hybrid, exhibited by Messrs. Charlesworth at the same meeting. Its parents are *O. cirrhosum* and *O. Uroskinneri*, the former being the seed bearer. In shape the flower most resembles the former, but the segments are much broader and densely dotted with reddish purple on a pale ground. The lip has much of the *O. Uroskinneri* shape, and has two large denticulate yellow keels. The column wings are square and nearly truncate. It is very promising, but evidently not yet fully developed. It appears to be the first hybrid from *O. Uroskinneri*.

ODONTIODA LUTETIA.—This is a third very interesting hybrid which was exhibited by Messrs. Charlesworth & Co. at the same meeting. It was derived from *Cochlioda Nœtzliana* × *Odontoglossum luteopurpureum*, and is fairly intermediate between them in size and colour. The flowers may be described as light vermillion, with traces of narrow yellow lines on the petals, representing the ground colour. The lip is very pandurate, half adnate to the column at the base, with a red blotch in front of the jagged crest, while the column wings are broad and obscurely denticulate. The segments are rather elongated, and the yellow ground colour of *O. luteopurpureum* has reduced the brilliancy of colour of the *Cochlioda* parent more than might have been anticipated.

NOTES.

Two meetings of the Royal Horticultural Society will be held at the Royal Horticultural Hall, Vincent Square, Westminster, during April, on the 14th and 28th, when the Orchid Committee will meet at the usual hour, 12 o'clock noon.

THE Manchester and North of England Orchid Society will hold meetings at the Coal Exchange, Manchester, on April 2nd, 16th, and 30th. The Committee meets at noon, and the exhibits are on view from 1 to 4 p.m.

The Horticultural event of the month will be the great International Horticultural Exhibition at Ghent, the sixteenth of the Quinquennial series, which will celebrate the centenary of the Society's existence. A very fine show of Orchids is anticipated, as something like seventy classes are set apart for them. A list of the jurors who have accepted invitations to officiate has been issued, containing representatives of almost every European country, as well as of the United States and Brazil, and among them are the names of many well known Orchidists, British and Continental.

The Jury will assemble on Friday morning, April 24th, at 9 o'clock, in the reception hall at the Exhibition, and judging will commence shortly afterwards. Luncheon will be served at 2 p.m.; at 5 p.m. a botanical lecture will be given by Prof. Noel Bernard, and at 8 p.m. the Jury are invited to attend a performance at the Theatre Royal, which has been arranged by the Society, "l'Avenir Horticole." The Exhibition will be formally opened by His Majesty King Leopold on Saturday morning, April 25th, at 11 o'clock, and at 8 p.m. there will be a reception at the Town Hall. On Sunday, April 26th, at 11 o'clock a.m., the monument erected to the memory of the late Comte de Kerchove de Denterghem will be unveiled; at 1 p.m. the members of the Jury are invited to attend a "Raout," and at 5 p.m. the usual grand banquet will take place at the Theatre Royal. A brilliant gathering is anticipated at this meeting. During the following week there will be opportunities of visiting the numerous horticultural establishments in the neighbourhood.

On Monday, Tuesday, and Wednesday, April 27th, 28th, and 29th, the sale of the late Marquis de Wavrin's fine collection of Orchids will take place, and will doubtless attract a large number of Orchidists. Particulars of the sale will be found in our advertisement columns.

A beautiful hybrid from *Lælia tenebrosa* × *Cattleya Trianae alba* is sent by M. L. Cappe, Vesinet, France. The sepals and petals are nearly white, and the lip bright purple with a pale throat. It is a variety of *Læliocattleya Mabel*.

A very fine branched inflorescence of *Odontoglossum* × *Rolfia* is sent from the collection of William Thompson, Esq., Walton Grange, Stone, by Mr. Stevens, together with *O.* × *mulus magnificum*, and a third very handsome thing which has hitherto passed as a form of *O.* × *Crawshayanum*, though its identity is not quite certain.

An inflorescence of *Orchis longibracteata* is sent from the collection of G. W. Jessop, Esq., Rawdon, Leeds, by Mr. Wilkinson. It is a very early-flowering species, whose history was given at page 93 of our fourteenth volume.

A very richly-coloured form of *Lælia Jongheana* is sent from the collection of Sir John Edwards Moss, Roby Hall, St. Mary Church, Torquay, which quite rivals the one figured in the *Botanical Magazine* (t. 6038) many years ago, when the species was very rare. A very large and well-shaped form of *Odontoglossum nobile* (Pescatorei), is also sent, which measures nearly three inches in expanse across the petals.

A flower and photograph of a very large and beautiful albino *Cattleya* are sent by Messrs. Hugh Low & Co., under the name of *C. Lueddemanniana alba* var. *Empress*. It is a pure white with the exception of the light yellow throat. It was received from Venezuela early in 1907. *C. L. alba* flowered in the collection of M. F. Finet, Argenteuil, in 1886 (*Orchidoph.* 1886, p. 365), and was afterwards figured *Reichenbachia* (ser. 2, ii. p. 59, t. 74).

It is interesting to find that the original plant of *Dendrobium Kingianum album*, mentioned at page 88, has not been lost sight of. Mr. Thurgood writes that it is in the collection of H. T. Pitt, Esq., of Rosslyn, Stamford Hill. It was purchased at Mr. Smee's sale, and is now a fine plant with ten leads, and flowers every year, often producing two and three racemes from the apex of the same pseudobulb. We should like to see flowers of it.

Several fine photographs of plants in the collection of Mrs. B. B. Tuttle, of Naugatuck, Conn., U.S.A., are sent by Mr. M. J. Pope. One shows a remarkably fine group of over two hundred *Phalænopsis Aphrodite*, forming a very beautiful picture. Mr. Pope remarks that there is quite a variation between them in size and colour. One of the photos shows an individual plant with a panicle of five branches. A photo of *Dendrobium Phalænopsis* shows four racemes and 28 flowers on the same growth. It is a nearly white variety, and has been self-fertilised, and also crossed with *D. formosum*, in the hope of producing some albinos. The others are a plant of *Lycaste lasioglossa* with twelve flowers on one bulb, and *Paphiopedilum* × *Sallieri maculatum*, a very handsomely blotched variety.

ORCHID PORTRAITS.

CALANTHE $\times$ VEITCHII.—*Gard. Mag.*, 1907, p. 219, with fig.

CATTLEYA LUEDDEMANNIANA ALBA VAR. EMPRESS.—*Journ. Hort.*, 1908, i. p. 285, with fig.

CORYANTHES SPECIOSA.—*Amer. Florist*, 1908, pp. 325, 326, with fig.

CYMBIDIUM INSIGNE SANDERI SPLENDENS.—*Gard. Mag.*, 1908, pp. 199, 200, with fig.

CYMBIDIUM $\times$ WINNIANUM (specimen plant).—*Gard. Mag.*, 1908, p. 179, with fig.

CYNORCHIS LOWIANA.—*Gard. Chron.*, 1908, i. p. 184, with suppl. plate.

CYPRIPEDIUM DEBILE, Rchb. f.—*Bot. Mag.* t. 8183.

DENDROBIUM CRINIFERUM.—*Gard. Chron.*, 1908, i. p. 194, fig. 81. The figure is correct, but the text relates solely to *D. crumenatum*, a species of a totally different group.

DENDROBIUM MADONNÆ.—*Gard. Chron.*, 1908, i. p. 162, fig. 67.

DENDROBIUM THYRSIFLORUM.—*Journ. Hort.*, 1908, i. p. 231, with fig.

LÆLIO-CATTLEYA ELINOR.—*Gard. Mag.*, 1908, p. 244, with fig.

LÆLIO-CATTLEYA PIZARRO.—*Garden*, 1908, i. p. 153, with fig.

MAXILLARIA LUTEO-ALBA.—*Gard. Chron.*, 1908, i. pp. 158, 165, fig. 69.

ONCIDIUM MACRANTHUM.—*Gard. World*, 1908, p. 203, with fig.

SOPHROCATTLEYA ANTIOCHUS RUBRA.—*Journ. Hort.*, 1908, i. p. 209, with fig.

ANSWERS TO CORRESPONDENTS.

[Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An ADDRESSED postcard must be sent if a reply by post is desired (abroad, reply postcards should be used). Subjects of special interest will be dealt with in the body of the work].

J. W. *Orchis longibracteata* (syn. *Barlia longibracteata*) is correct, but *O. foliosa* is a quite different Madeiran species, nearer to *O. latifolia*.

B. S. *Cattleya Trianae*, and others mentioned, should be watered very sparingly in winter, but not be kept absolutely dry, as your remark would seem to imply. As soon as there are signs of renewed activity the amount should be gradually increased, and if the bulbs are matured, and the treatment right in other respects, the flowers will develop naturally. The slightest amount of moisture in the compost will suffice when the plants are at rest.

H. G. *Trichoglottis*, species at present uncertain, and a hybrid between *Paphiopedilum villosum* and either *P. Chamberlainianum* or *P. Victoria-Mariae*, apparently the latter.

L. G. We await particulars of the *Paphiopedilum* with lip-like petals.

FL. C. Both the *Cattleyas* appear to be very light-coloured forms of *C. Trianae*. Is it quite certain that they came out of an importation of *C. Mendelii*? We find no evidence of these two growing together.

An unfortunate mistake crept into the records of parentage of two of the *Paphiopedilums* mentioned last month at page 94. One should have been *P. villosum aureum* $\times$ *Buchanianum* (not *Beeckmanii*), and the next *P. calophyllum* (not *callosum*) $\times$ *hirsutissimum*, so that it is not a form of *P. Doncasterianum*. Both are apparently new.

W. H. S. Were the first growths really developed in the pendulous manner shown? We do not see why the plant should have suddenly begun to grow in the reversed direction. We have seen *Oncidium Cebolleta* apparently reverse itself, but it was because it was wired on the block the wrong way up. May not something of this kind have happened in your case?

Photographs received, with thanks. M. J. P.; W. H. B.; T. H. J.

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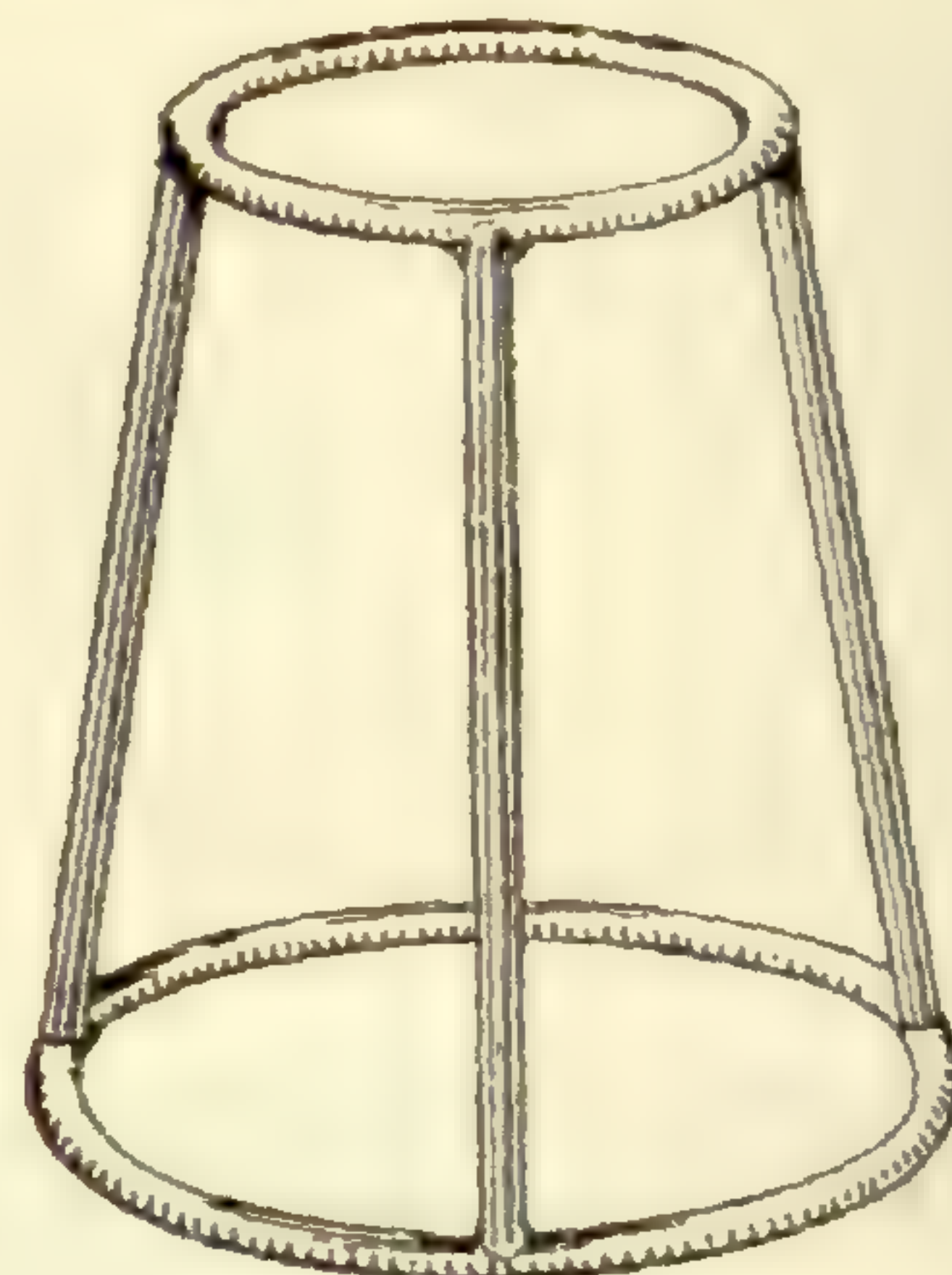
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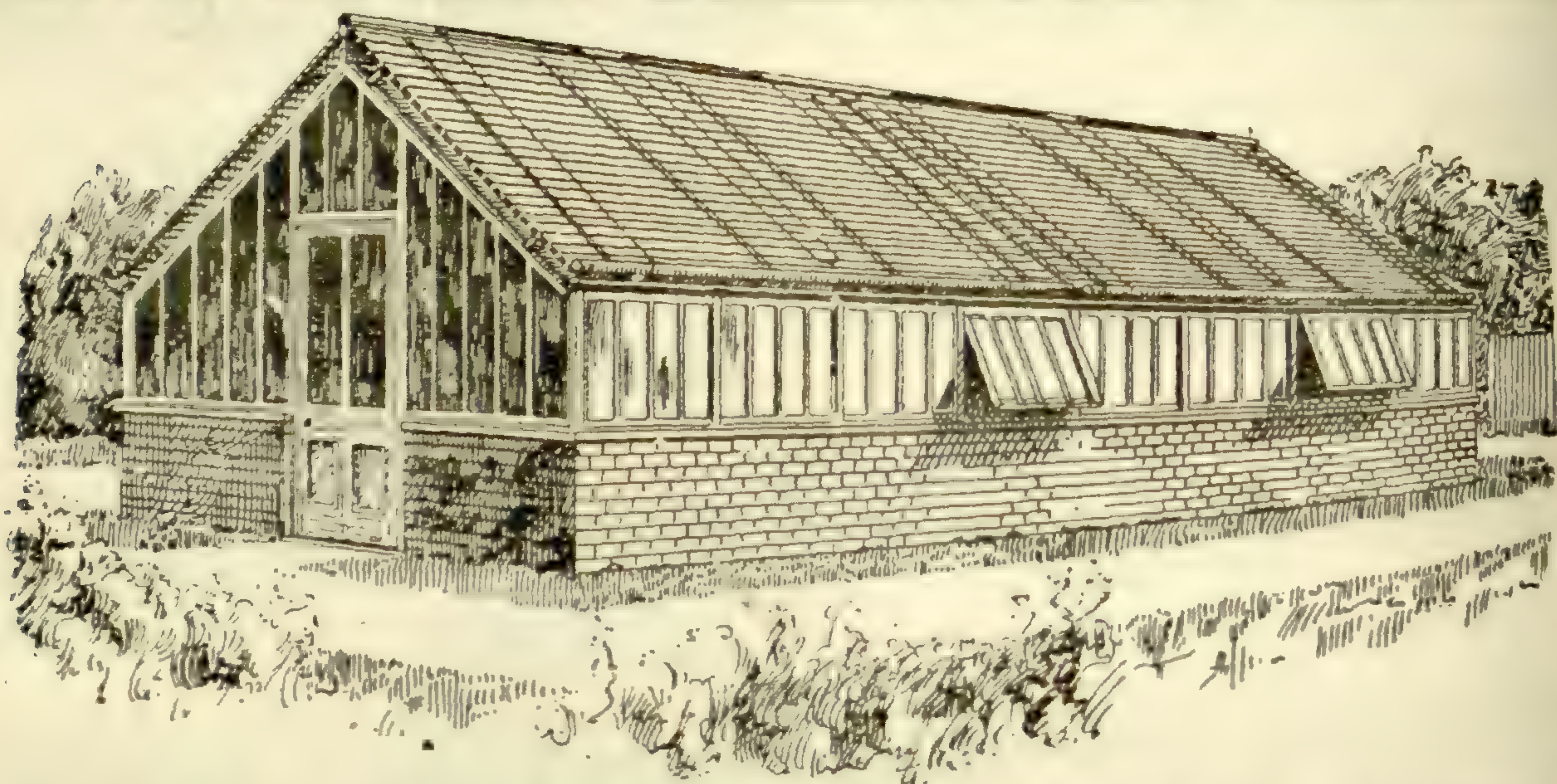
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VOL. XVI.]

MAY, 1908.

[No. 185.]

THE ORCHID REVIEW:

An Illustrated Monthly Journal of Orchidology.

Contents.

	PAGE		PAGE
Angræcum hyaloides (fig. 20) ...	137	Cirrhopetalum papillosum ...	155
Answers to Correspondents ...	160	Coelogyne virescens ...	155
Calendar of Operations for May ...	134	Liparis tabularis ...	155
Chytroglossa Marileoniæ ...	159	Liparis Warpuri ...	155
Dendrobium Phalænopsis (fig. 21) ...	146	Orchid Portraits ...	160
Dies Orchidiani ...	129	Orchids at the Ghent Quinquennial	
Hybridist ...	158	Exhibition ...	147
Odontoglossum × Arlequin ...	158	Orchids in season ...	156
Odontoglossum × gemmatum ...	158	Orchids: their structure, fertilisation and	
Odontoglossum × Hiawatha ...	158	development ...	131
Odontoglossum × nethernense ...	158	Societies ...	138
Notes ...	159	Manchester and North of England	
Novelties ...	155	Orchid ...	142
Cirrhopetalum Fascinator ...	155	Royal Horticultural ...	138

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Volumes I. to XV. can be supplied unbound at 6/-, or bound in cloth, 7/6, postage extra. Cost of postage: book post, 9d. per volume; parcel post within the United Kingdom only, 5d. per single volume (series by weight).

Also cases for binding either volume at 1/6 each, post free throughout the postal union.

All Subscriptions, Advertisements, Communications and Books for review, should be addressed:—The **Editor of the Orchid Review**, Lawn Crescent, Kew.

Cheques and Postal Orders (sent as above) should be made payable to FRANK LESLIE & Co., and, to ensure safety in transit, should be crossed "& Co."

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THE ORCHID REVIEW.

VOL. XVI.]

MAY, 1908.

[No. 185.]

DIES ORCHIDIANI.

THE event of the month has been the great Quinquennial Show at Ghent, an event to which Orchidists as well as other horticulturists look forward with interest, and which on this occasion assumed a special importance because it also celebrated the Society's Centenary. Orchids were, of course, well represented—no Show would be complete without them now-a-days—and the group of hybrid *Odontoglossums* exhibited by M. Ch. Vuylsteke surpassed any that has ever been staged. Over a hundred splendidly-grown plants, with long spikes of flowers of most exquisite shape and colouring, produced an effect beyond the power of mere words to describe, though I suppose something of the kind is attempted in the report of the Show.

There was also a British group of surpassing excellence, staged by Major G. L. Holford, in the brilliant style with which frequenters of the big hall at Vincent Square are happily familiar, though I doubt whether its equal has ever been seen there. A space of 300 square feet was filled with plants, remarkable alike for culture and richness and variety of colouring, combined with tasteful arrangement, and considering the long distance they had come, and the difficulties of transit, it must be admitted that the credit of British Orchid culture was worthily upheld.

The Show itself is held under such totally different conditions from those of the Royal Horticultural Society, that I cannot help wondering what the result would be if such a Show could be held in England. Of course I am alluding to Orchids only, for which eighty-two classes were set apart, numerous Gold and Silver Medals and other prizes being offered, yet in two-thirds of them there were no exhibits, and in many cases only a single group. Prizes were offered for the best single specimen in no fewer than twenty-nine different genera, and yet twenty-two of these remained blank, a fact difficult to understand, for some of the genera were well represented in the larger groups. Several of the larger classes were also unaccountably blank, including one for the best 100 exotic Orchids, in

strong examples, for which the President of the Society offered an Œuvre d'Art, value 500 francs. The class for the group most numerous in species was also blank, with many smaller classes. Against these must be set the groups staged "not for competition" already alluded to, and one or two smaller ones.

The *facsimile* reproduction of the first exhibition of the Society, held a century ago, with its contents, was a feature of the greatest interest, but, alas, historical accuracy did not permit the inclusion of a single Orchid, so that I cannot say more about it.

Returning for a moment to M. Vuylsteke's group, I noticed one very striking hybrid called *Odontoglossum* × *maculatissimum*, though it could not by any stretch of imagination be called "very much spotted." But I soon learnt that the name was given to mark the fact that it was a hybrid between *O. maculatum* and *O. × ardentissimum*. I cannot, however, help wishing that some different name had been chosen. It is fully recognised that names based on this principle are very helpful in recalling the parentage, and, if not too long, may be both euphonious and appropriate, but such names should be avoided when they have a legitimate meaning of their own, as in the present case. I noticed other new names to which this principle had not been applied, and as no other clue to the parentage was given, it is difficult to say what they represent. I think an effort ought to be made to preserve the record of these beautiful plants, otherwise they may ultimately be more difficult to trace than natural hybrids, where the opportunities of uniting distinct species are more limited.

So much for the Show itself. I have not alluded to the numerous other functions which, with the opportunity for comparing notes of progress and of meeting old friends, add so much to the enjoyment of the Ghent week. The work began on Friday morning, when the Jury were photographed together, on the invitation of the *Tribune Horticole*, after which, and a short address of welcome by the President, the judging commenced, followed by the luncheon, and a graphic lecture by M. Noel Bernard, on "Symbiosis between Orchid Roots and certain Fungi." Next morning the Jury were invited to be present at the opening ceremony by the King. A day later came the unveiling of the statue of the late Comte Kerchove de Denterghem, late President of the Society, and author of a popular work on Orchids, in the Place du Comte de Flandre, with the inevitable banquet in the evening. These functions were varied by others in which the jury were entertained in the most cordial and hospitable fashion. Altogether the visit was one that will long be recalled with pleasure.

ARGUS.

ORCHIDS: THEIR STRUCTURE, DEVELOPMENT, AND FERTILISATION.

Notes of a lecture given at a meeting of the Kew Gardeners' Mutual Improvement Society, held on February 17th, 1908, by Mr. R. A. Rolfe, A.L.S., and illustrated with lantern slides.

(Continued from page 101.)

Up to this point we have been dealing almost entirely with terrestrial Orchids, but the two remaining tribes are largely epiphytic, though not entirely so. The Epidendreæ follows next in the series, forming an enormous tribe, which is well represented among cultivated Orchids, including such familiar genera as Dendrobium, Epidendrum, Cattleya and Lælia, Bulbophyllum, Cœlogyne, Masdevallia, Phaius, Calanthe, and others too numerous to mention. Here the pollinia are seen to have taken on another stage of development, having become what is termed waxy. The pollen grains are united into masses, corresponding with the number of cells, two, four, or eight, into which the anther is divided, and are cemented together into waxy masses, which are removed bodily by the insects which fertilise the flowers. In some cases the pollinia are partially powdery, at least when old, and a few genera have been placed in both the Neottieæ and Epidendreæ, showing that the transition of the one into the other is not very sharply defined. In many cases, however, the pollinia are hard, and not easily cut with a knife.

Here the transition from the terrestrial to the epiphytic habit is well shewn, and it may be remarked in passing that it is among the former that the species with partially powdery pollinia are found. The Epidendreæ are mostly tropical and sub-tropical, and the epiphytic species are found in the great forest regions, the epiphytic habit, with all that it implies, being an adaptation to enable them to exist up among the branches of the trees, where the necessary light, and also the insects on which they rely for the fertilisation of the flowers, are found.

The change from a terrestrial habitat implies a very different method of acquiring their food, and it is in the nature of the roots that one of the greatest differences is seen. The roots of a plant serve the double purpose of anchoring it securely to the matrix on which it grows, and of taking up food for its subsistence. In terrestrial plants the roots are usually much branched, and finely divided, but in epiphytes these characters are greatly modified. In the latter the roots are generally fleshy, and except at the growing point are covered with a white, closely felted covering, known as the velamen, and they adhere tightly to the bark of the trees on coming into contact with them, and often wrap round them so as to give them a secure attachment. But they only utilise their hosts to this extent, for they are not parasitic like the mistletoe, but collect their own food from the moisture

which trickles down the bark from the smaller branches above, such moisture containing the necessary chemical matters in a state of solution.

Among epiphytes, too, we find various modifications of the stem into pseudobulbs, which are storehouses of water and nutrient matter, to tide the plants over a dry period. Sometimes the leaves themselves become fleshy, thus forming such storehouses. The inflorescence and flowers have also become specialised in various ways with which we are more or less familiar. The essential feature of the group as regards fertilisation is that when an insect visits the flower, it touches the rostellum, which immediately liberates a quantity of viscous matter on the head or shoulders of the insect, and this serves to attach the pollinia to the insect, and when it flies away the pollinia are withdrawn, and on visiting another flower they come in contact with the viscid stigma, and are left behind, fertilization following naturally.

We will now pass along to the Vandææ, another very large tribe, widely diffused through tropical and subtropical regions, in which the culminating point of development in this particular branch is reached. The essential difference between the Vandææ and the Epidendreæ is that in the latter a portion of the rostellum, in addition to the viscus or gland, becomes attached to the pollinia, and are removed with it by the fertilising insect. This character is well seen in *Odontoglossum*. If a pencil is inserted so as to touch the point just above the stigma, and then withdrawn, the pollinia will come away, and if examined it will be seen that they are attached to a slender white stalk, at the base of which the gland is situated. This stalk is called the stipes, and is a part of the rostellum which becomes separated through the production of a layer of special tissue, analagous with the layer of cells which cause the fall of an ordinary leaf in autumn. Thus the portion removed by the insect in the Vandææ consists of the pollen masses, the stipes, which connects them to the viscid disc or gland, and the gland itself, and these collectively are called the pollinarium. It is a compound organ, functionally male, but partly derived from the rostellum, which belongs to the female whorl. It is a good example of the high degree of specialisation to which the Orchid flower has attained.

The Vandææ is a very large group, containing many of our popular cultivated Orchids, as *Odontoglossum*, *Oncidium*, *Angræcum*, *Phalænopsis*, *Vanda*, *Stanhopea*, &c. It is divided into several subtribes, as *Cymbidiææ*, *Stanhopeææ*, *Oncidiææ*, *Sarcantheææ*, and others. We may now notice some of the species individually.

Rodriguezia fragrans (now thrown on the screen) is a plant which grows in tufts on the branches of trees, and throws out numerous white roots around and beneath the plant, showing that it derives some of its food direct from the gases and moisture in the atmosphere, and possibly that it grows on small twiggy branches, which form a kind of collecting ground

for the plant's food, and to which the roots adhere. The habit is quite persistent, for in cultivation these roots invariably wander from the basket of compost into the surrounding air. They also flower very profusely when first brought home, but soon dwindle away, or, as is often said, "flower themselves to death," but this only arises from the difficulty of providing proper treatment for them. If this were secured, they would thrive as well as in their native homes.

Angræcum Eichlerianum is also reproduced from a photograph of a plant in the Kew collection. In this case the plant is not tufted, but has erect stems, which gradually lengthen, and keep on throwing out aerial roots, some of which cling to their support, but others wander free into the air, as seen in the picture. The flowers are produced in short axillary peduncles, each bearing a single large greenish-white flower, but many appear together at the proper season, rendering the plant most graceful and attractive. The lip, it will be noticed, bears at its base a prominent spur or nectary, which secretes honey, and this serves to attract the insects which fertilise the flower. In the case of *Angræcum sesquipedale* the spur is very long, in extreme cases as much as 13½ inches, and it is supposed that in Madagascar, its native home, there exists some moth with a very long proboscis, which acts as the fertilising insect.

The next slide shows *Sarcochilus luniferus*, a very remarkable Indian Orchid, which appears to consist entirely of a mass of fleshy roots, proceeding from a very short stem, and the inflorescence, the leaves being absent. Like the genus *Tæniophyllum* (which is rarely seen in cultivation), it may be described as leafless, though in rare cases tiny leaves are produced, showing that the plant has descended from a leafy ancestor, though it is now able to get along very well without such apparently essential appendages as leaves. The fact is the leaf function has been turned over to the roots, as these contain chlorophyll, which carry on the nutrition of the plant quite effectively. This type of vegetation is not rare among tropical Orchids, though it is not often seen in cultivation. The genus *Tæniophyllum*, which is closely allied to *Saccolabium*, and ranges from India through the Malayan Archipelago to Australia and Polynesia, has entirely this habit. There is at least one other leafless Indian *Sarcochilus*. *Angræcum* has several leafless species in Madagascar and Tropical Africa. The small genus *Dendrophylax* has also the same character, while *Campylocentrum*, another American genus closely allied to *Angræcum*, has several leafless species. In all these plants the functions of the leaves are carried on by the roots, which invariably contain chlorophyll, and the peculiarity has evidently arisen through a deciduous habit. The roots of *Phalænopsis* and other epiphytic Orchids contain chlorophyll, which would enable them to exist for a time without leaves, and a few species of

this group are known to lose their leaves in periods of drought, and, in fact, to become semi-deciduous.

(To be concluded.)

CALENDAR OF OPERATIONS FOR MAY.

By W. J. MORGAN, Rann Lea Gardens, Rainhill, Lancs.

ODONTOGLOSSUMS that have passed out of flower should be examined, and any that require potting or top-dressing should be attended to. When the growths are about half developed is the best time to pot, as then the young roots soon get hold of the new material, and the whole bulb will not be so likely to shrivel. So long as the plants are in the right condition for potting they can be done at any time. Autumn is the generally recognised time for potting, but I find that by watching the plants, and doing those at once that have the growths half made, instead of leaving them all till autumn, that you keep the work in hand, and the plants improve with being caught at the right time, whereas if the early growths are left they get too far advanced, and when potted they do not go away so well as the younger growths. A mixture of peat, leaves, and moss, with plenty of crushed crocks, will suit them well.

Extra shade should be given to newly potted plants, and not quite so much air given until they get established again. Frequent spraying overhead will keep the bulbs plump.

A sharp look-out must be kept for thrip during the summer months. Often in the summer, when the outside conditions are dry, thrip is very plentiful outside, and with the extra ventilation which has to be used, they soon get plentiful in the *Odontoglossum* house if not checked.

The houses will have to be well shaded during the next few months. Where lath or canvas blinds are used there will be no difficulty in keeping the glass cool, but where the houses run north and south a slight sprinkling of flour and water will prevent scorching early in the morning, and in the evening after the blinds are rolled up.

SEEDLINGS should be pricked off as soon as they are large enough to handle, and pushed on while the weather is warm, as then they will have a better chance to survive the winter. Pots should be prepared several days before they are required for use, and placed in the house to get thoroughly warmed before using them to prick off into, as a sudden check to small seedlings causes them to damp off. Plenty of moisture should be kept in the house, and the temperatures should be kept even. Spray overhead in fine weather, as it saves so much watering, and gives the plants a chance to get hold without getting the pots sodden. Keep the seedlings well up to the light, and well shaded. There will be plenty of time to harden them in the autumn. We keep ours going all the year

round. It is not much use trying to rest them in winter, as it encourages thrip, and if thrip once gets hold they might just as well be thrown away as they seldom recover.

CYPRIPEDIUMS will nearly all have finished flowering, and should be examined, and potted or top-dressed if they require it. Get them growing as soon as possible, so as to give them a good chance to make their growths for flowering next season. Keep them well syringed, as it keeps them clean, and also keeps a good growing atmosphere in the house. Care should be taken in ventilating, as *Cypripediums* object very much to cold draughts blowing on them.

The *C. bellatulum*, *Godefroyæ*, and *niveum* hybrids do not object to syringing in summer time, but it should not be done quite so heavily as with the other species. This class will be better staged by themselves, as a little more care is required for them, and then they can all be examined without having to hunt through the house for them. When potting, give them a little extra drainage, and also mix more crushed crocks in the material. They like plenty of water in the growing season, but must on no account be allowed to get sodden. They do not require as heavy a shade as other *Cypripediums*, in fact we treat ours more as *Cattleyas* in this respect, and get fine results. Bottom air can be left on just at their end of the house day and night during the summer, as they like to get dry at night, and it prevents the leaves from damping off. The flowers also come much finer, and the plants get harder and go through the winter much better.

CATTLEYS, *Dendrobiums*, and *Lælias* that have been recently potted, and have commenced rooting, should have a good supply of water as soon as the roots get over the tops of the pots, also more sunlight, care being taken not to scorch the leaves. They will stand a lot more sun than most Orchids, and benefit by it. If they are syringed overhead on a nice afternoon, and the blinds are rolled up between 3 and 4 o'clock, and the air taken off for three hours or so, they will make fine strong bulbs, and it seems to freshen them up to close the house up for a short time with plenty of moisture and sunheat. The power of the sun must be considered when rolling up the blinds, also the position of the house, as some days, although the sun is bright, it has no power to scorch plants, whilst on other days it will easily burn though not nearly so bright. I find this the only way in the north to get growths anything approaching the southern growers, who get much more sun than we do, and also clearer days.

At a recent exhibition of the Manchester Orchid Society there was a magnificent group of *Dendrobiums* shown from the South, which should help to make them more popular round Manchester, as I think with a little attention they could be well grown if advantage is taken of what sun we do get. The plants and flowers of *D. nobile album*, of which 200 plants were

shown, were pictures of health and good cultivation, and must have given the growers great pleasure to exhibit.

Calanthes that were potted as advised in previous Calendars, will require more water as the pots get filled with roots. A little weak manure water will help them to make fine large bulbs and flower spikes.

Flowering plants of all kinds should, if possible, be removed from the growing houses, as with the extra moisture required for the growing plants the flowers soon spot, and are then useless for exhibition or cutting. It is surprising what a display of flowers can be kept, even from a small collection, if a little care is taken of them. Most of them take a year to grow, often for only one flower or inflorescence, especially the rare varieties, and a small house or corridor used for a flowering house, well repays the extra labour of shifting the plants just while they are flowering, and most Orchids are no worse for being left in flower a month and with *Cypripediums* two months; in fact it seems to keep them more in their season, provided, of course, they are fairly strong and healthy plants. A great heat is not required if the house (not the plant) is kept dry. Our flowering house keeps from 50° to 55° in winter, and in summer we dispense with fire heat except in damp weather. The plants do not suffer from the lower temperatures during their flowering season, and the flowers keep perfect till they wither with age. It is worth a trial, and I am sure would make Orchids more popular.

We often have visitors here, many of them gardeners, who are very much surprised to see Orchids with anything like a brilliant colour. Their only idea of an Orchid is something green, most of them with a curiously shaped flower, something which can only be grown in a very high temperature, and very expensive and difficult to cultivate. A group of Orchids is not equalled, never mind beaten, by any other class of flowers, and one can make a group and have the satisfaction of looking at it for a fortnight at least without rearranging it every day.

TEMPERATURES during the next few months will be difficult to keep anything like even. As little fire heat as possible should be used, only sufficient to keep the houses from dropping below the proper figures, which are as follows:—

Cool house, 55°; Intermediate, 60°; *Cattleya*, 65°; East Indian, 70°.

It is no use putting a lot of air on to keep temperatures down. Use the ventilators just enough to keep the air in the houses changing. Plenty of moisture must be kept in the houses, so do not be afraid to use the syringe during the summer months, as there is no danger of damping if used with care. The harder growing sections will stand a lot more than the soft growers, which are heavily shaded. Keep a sharp lookout for thrip and red spider, and fumigate or spray as soon as they make their appearance, or they soon mark the leaves.

ANGRÆCUM HYALOIDES.

ANGRÆCUM *hyaloides* is a very pretty little Madagascar Orchid, which was imported by Messrs. James Veitch & Sons, and described in 1880 (Rehb. f. in *Gard. Chron.* 1880, i. p. 264), the author remarking that it claimed "a place amidst the 'gems.'" Mr. Harry Veitch had remarked that the plant was, in growth, "a miniature of *Angræcum citratum*." These remarks are very well borne out by the annexed figure, which is reproduced from a photograph sent by Frau Ida Brandt, of Zurich, and represents the plant slightly below natural size. The photograph was taken from above, hence the fore-

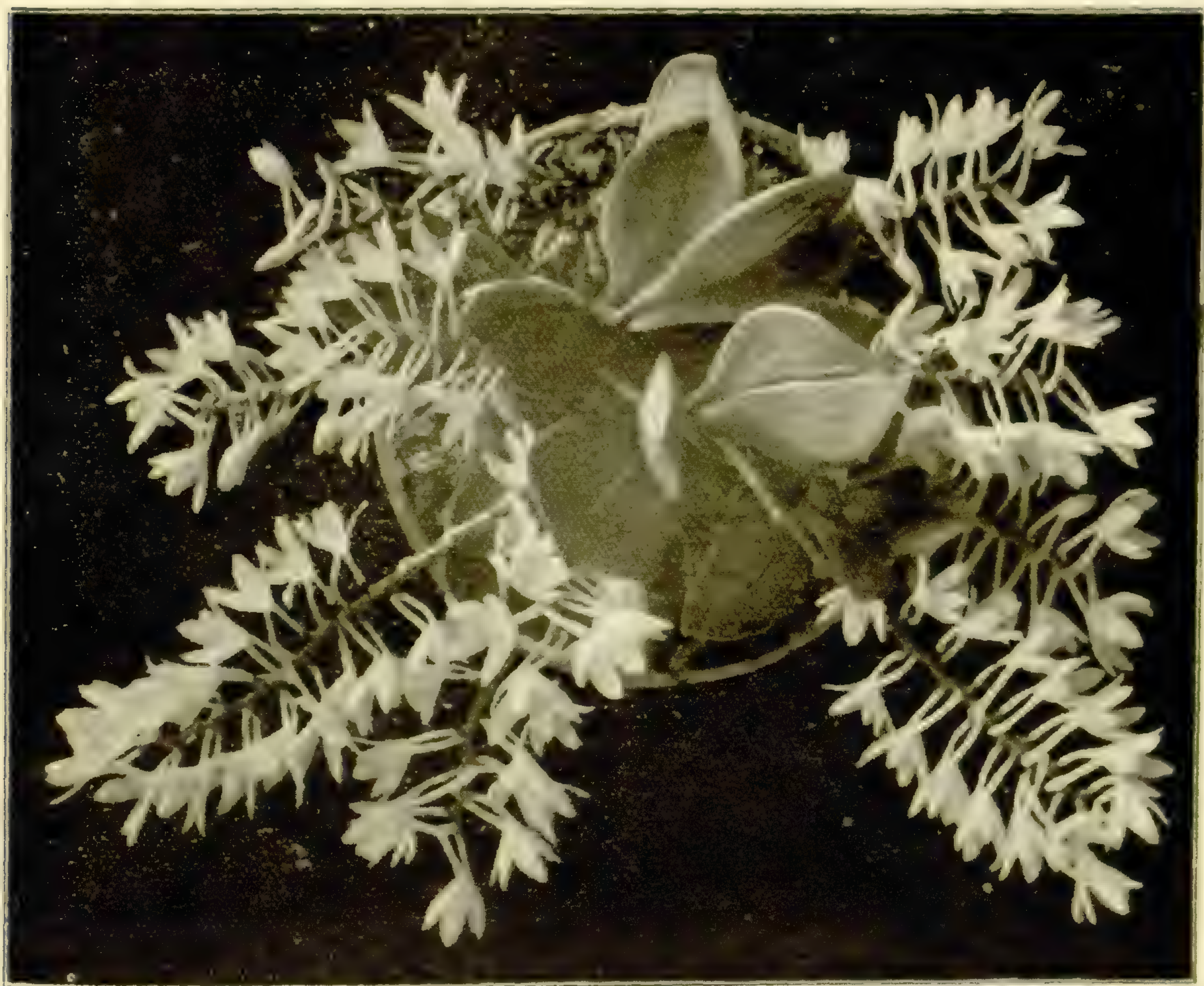


Fig. 20. ANGRÆCUM HYALOIDES.

shortened appearance of the leaves. The species is remarkable for its compact habit and short racemes, the latter being produced very freely, so that the plants are occasionally quite a mass of flowers. Messrs. Hugh Low & Co. afterwards obtained it, "from their great Madagascar importation," as was recorded by Mr. John Day, who figured it in January, 1883 (*Orch. Draw.* xxxii. t. 29), at the same time remarking: "The leaves of this are stout, shining, and dark green. It is a most abundant bloomer, one plant having as many as eleven spikes. The flowers are pure white and unscented." A

beautiful little specimen was afterwards figured from the collection of M. G. Mantin (*Orchidophile*, 1889, p. 347), showing the base of the plant wreathed with flowers, a character very well shown in some dried specimens preserved at Kew, which were collected by C. Curtis, who is believed to have been the original discoverer of the species. These specimens are not localised, nor is the altitude at which the species grows indicated, though a clue is afforded by the fact that Messrs. Hugh Low & Co. afterwards imported what is believed to be a natural hybrid between *A. hyaloides* and *A. citratum*, namely *A. × primulinum*, Rolfe (*Gard. Chron.* 1890, i. p. 388). That plant is said to be exactly intermediate in habit, and the flowers show unmistakably the characters of both parents. *A. hyaloides* succeeds well in a Warm House, suspended in a basket or shallow pan, in the usual compost, care being taken with the watering during winter, and in shading during bright weather.

R. A. R.

SOCIETIES.

ROYAL HORTICULTURAL.

A MEETING of this Society was held at the Royal Horticultural Hall, Vincent Square, Westminster, on March 31st, when there was a good display of Orchids, though the groups staged were much fewer than usual, and only two medals were awarded. There was, however, a number of choice exhibits, and the other awards consisted of four First-class Certificates, four Awards of Merit, and two Cultural Commendations.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt (gr. Mr. Alexander), sent a remarkably fine specimen of *Ada aurantiaca*, bearing fifty-one spikes of its brilliantly-coloured flowers, to which a Cultural Commendation was given, and *Cypripedium × Helen II.*, Westonbirt var. (insigne Harefield Hall var. *× bellatulum*), a remarkably fine form, which gained a First-class Certificate.

Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. Chapman), sent *Phaiocalanthe delicata*, bearing two spikes of cream-coloured flowers tinged with rose, and the handsome *Phaius × Clive* (*× Norman × simulans*), the latter gaining a First-class Certificate.

M. Jules Hye de Crom, Ghent (gr. M. Coen), received a First-class Certificate for *Cattleya × Suzanne Hye de Crom*, var. *Jungfrau*, a larger variety of the beautiful albino that received a similar award at the previous meeting. He also sent a prettily-spotted form of *Odontoglossum crispum*, derived from *O. c. illustris × O. c. augustum*.

H. S. Goodson, Esq., Fairlawn, West Hill, Putney (gr. Mr. Day), received a Silver Banksian Medal for a fine group, containing several plants

of the beautiful *Cattleya intermedia nivea*, some good forms of *Odontoglossum crispum*, a seedling *Odontoglossum* ($\times$ *amabile* $\times$ *Rolfeæ*), bearing a single large, finely blotched flower, *Brassocattleya Eva*, a richly coloured form of *Cypripedium* $\times$ *Countess of Carnarvon*, and other interesting things.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), sent *Cypripedium* $\times$ *J. Gurney Fowler*, having white flowers with a purple blotch on the front of the lip, *Odontoglossum* $\times$ *Judith*, exhibited as *O. crispum* $\times$ *excellens*, but afterwards altered to *O. sceptrum* $\times$ *loochristiense*, having deep yellow flowers, blotched with brown, and *O.* $\times$ *percultum*, var. *J. R. Roberts* (*Rolfeæ* $\times$ *ardentissimum*), the latter, a very beautiful rosy lilac, densely blotched variety, gaining an Award of Merit.

J. Foster Alcock, Esq., Exhims, Northchurch, sent *Cypripedium* $\times$ *bingleyense*, Exhim's var., a very richly coloured form, and *C.* $\times$ *Berkeleyanum* (*Boxallii* $\times$ *bellatulum*), the latter a large and richly blotched variety, which received an Award of Merit.

Sir Jeremiah Colman, Bart., Gatton Park, Reigate (gr. Mr. Bound), received an Award of Merit for *Dendrobium* $\times$ *Thwaitesiæ*, Bound's var. ($\times$ *splendidissimum grandiflorum* $\times$ *Wiganianæ*), a very large variety, having buff-yellow flowers of four inches in diameter, with a purple disc to the lip.

Miss Fitzpatrick, The Lodge, Bedfont (gr. Mr. Tysoe), received a Cultural Commendation for a plant of *Cyrtopodium punctatum* bearing five large panicles of flowers.

J. Bradshaw, Esq., The Grange, Southgate (gr. Mr. Whitelegge), sent *Cattleya Schröderæ* var. *The Kaiser*, a fine white form with the usual orange disc to the lip, and *C. S.* var. *W. Duckham*, a pale lilac form with some purple in front of the disc.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), sent *Odontoglossum* $\times$ *Andalusia* ($\times$ *Andersonianum* $\times$ *loochristiense*), a pale yellow form, prettily blotched with purple brown, and *O.* $\times$ *Astarte* (*Harryanum* $\times$ *tripudians*), most like the former, but smaller, and the segments almost entirely dark chocolate brown.

W. James, Esq., Chichester (gr. Mr. Smith), sent two very fine forms of *Cattleya Schröderæ*.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan), sent *Lalio-cattleya Apollo*, having apricot yellow flowers tinged with pink.

F. W. Moore, Esq., Royal Botanic Garden, Glasnevin, sent a very distinct form of *Cypripedium Fairrieanum*.

F. M. Ogilvie, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), sent the beautiful *Dendrobium* $\times$ *Thwaitesiæ*, Veitch's var., *D. Wardianum*, Shrubbery var., a beautiful white form, having rosy tips to the segments, and *Odontoglossum crispum Alexandrovitch*, a handsomely blotched form.

J. Wilson Potter, Esq., Elmwood, East Croydon (gr. Mr. Young), sent *Odontoglossum crispum* Rossendale, and *O. c.* Empress of India.

G. F. Taylor, Esq., Margery Hall, Reigate (gr. Mr. Seaman), sent *Cymbidium Lowianum*, Margery Hall var., a very light-coloured variety.

Messrs. Charlesworth & Co., Heaton, Bradford, sent the handsome *Phalænopsis Sanderiana*, Wigan's var., a finely blotched form of *Odontoglossum* × *Fascinator*, with a spike of 27 flowers, and *Brassocattleya Digbyano-Schröderæ superba*, a fine white form, having the lip beautifully fringed, and tinged with pink in front.

Mr. A. W. Jensen, Lindfield, Sussex, received a Silver Banksian Medal for a group of *Cattleya Schröderæ*, including a good white form, with a few good *Odontoglossums*, one of them being a pretty rose-coloured form of *O. crispum*, having the flowers densely dotted with brown.

Messrs. Sander & Sons, St. Albans, received an Award of Merit for *Cattleya Schröderæ* Queen Alexandra, a remarkably fine blush white form, having a reddish orange throat, and a rose-purple band in front.

Messrs. Wm. Bull & Sons, Chelsea, showed a finely blotched seedling of *Odontoglossum crispum*, flowering when three years old, and having handsomely blotched flowers.

Messrs. Heath and Son, Cheltenham, showed a pretty little group, including *Dendrobium barbatulum*, *D. Wardianum*, *Odontoglossum* × *Adrianæ*, *Epiphronitis Veitchii*, *Oncidium concolor*, *Cypripedium* × *Dowlingianum*, *C. villosum*, *C. Chamberlainianum* × *concolor*, and others.

At the meeting held on April 14th there was a very good display of Orchids, and the awards consisted of six Medals, two First-class Certificates, two Awards of Merit, and two Cultural Commendations.

H. S. Goodson, Esq., West Hill, Putney (gr. Mr. Day), staged a fine group, to which a Silver Banksian Medal was awarded. It contained some good forms of *Odontoglossum crispum*, white and spotted, *O.* × *loochristiense* *Tracyanum*, some good forms of *Cattleya Schröderæ*, *C. intermedia nivea*, the fine white *Brassocattleya* Queen Alexandra, *Miltonia Phalænopsis*, various good *Lælio-cattleyas*, and *Cymbidium eburneum* Goodsonianum, the latter, which received an Award of Merit, having a broad purple band down the middle of the lip.

J. Foster Alcock, Esq., Northchurch, Berkhamstead, sent a very fine form of *Læliocattleya highburiensis*, and the heavily-blotched *Cypripedium bellatulum*, Exhim's var., which received a First-class Certificate.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), received a First-class Certificate for *Cattleya Schröderæ* var. The Baron, a very remarkable form, having very large blush white flowers, and the disc of the lip light reddish orange, with a zone of purple in front.

Sir Jeremiah Colman, Bart., Gatton Park, Reigate (gr. Mr. Bound), received an Award of Merit for *Dendrobium Brymerianum*, Gatton Park var., a large and very handsome form, the lip measuring $2\frac{1}{2}$ inches across.

J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. Davis), received an Award of Merit for a very fine specimen of *Masdevallia Schröderiana*, with 51 flowers.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), also received a Cultural Commendation for a magnificent species of *Dendrobium fimbriatum oculatum*, with 40 fine inflorescences.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), sent three plants of *Odontoglossum* × *Urania* (*crispum* × *cristatellum*), differing somewhat in colour and markings.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), sent a good *Cypripedium* × *Ajax*.

Mr. H. T. Wright sent from the Society's Gardens, at Wisley, an inflorescence of the rare *Cymbidium chloranthum*.

Messrs. James Cypher & Sons, Cheltenham, received a Silver Banksian Medal for a small group of well-flowered *Miltonia vexillaria*, a good selection of *Odontoglossums*, *Masdevallia macrura*, *Lælio-cattleya Dominiana*, *Brassocattleya Thorntonii*, and others.

Messrs. J. & A. A. McBean, Cooksbridge, received a Silver Banksian Medal for a good group, containing the richly-coloured *Cypripedium Lawrenceanum hackbridgense*, some good *Cattleya Mendelii*, *Odontoglossum Hallii Charlesworthii* with two fine spikes, some handsomely-blotched forms of *O. crispum*, and a most beautiful hybrid seedling from *O.* × *Rolfeæ roseum* × *O. c.* Starlight, having the flower handsomely blotched and spotted with claret purple, with the front of the lip white.

Mr. A. W. Jensen, Lindfield, Haywards Heath, received a Silver Banksian Medal for a group of fine varieties of *Odontoglossum crispum*, including a handsomely-blotched form, and some good *Cattleya Mendelii*.

Messrs. Hugh Low & Co., Enfield, received a Silver Banksian Medal for a pretty group, including some good *Dendrobium Wardianum*, *D. W. ochroleucum*, *D. barbatulum*, *Cattleya Schröderæ*, *Cypripediums*, &c.

Messrs. James Veitch & Sons, Chelsea, also received a Silver Banksian Medal for a good group of *Odontoglossum crispum*, *O. triumphans*, *O. Pescatorei*, *Cattleya Schröderæ*, a fine *Ada aurantiaca* with nine spikes, and two good plants of *Zygopetalum crinitum*.

At the meeting of the Scientific Committee on the same date Mr. R. A. Rolfe exhibited, on behalf of M. E. Cappe, Vesinet, France, two very diverse hybrids obtained from the same seed pod of *Lælio-cattleya Cappei* (a hybrid from *L. cinnabarina* × *C. Warscewiczii*), as the result of

fertilising a flower with mixed pollen from *Lælia flava* and *Cattleya Mendelii*. One appeared to be a true hybrid between L.-c. *Cappei* and *C. Mendelii*, whose characters were well blended, but the other closely resembled *Lælia Cowanii*, a supposed natural hybrid between *Lælia flava* and *L. cinnabarina*, in size and colour. It was suggested as a case of dissociation of the mixed character, whereby an ovule of L.-c. *Cappei*, from which the character of *C. Warscewiczii* had been eliminated, had been fertilised by a pollen tube from *Lælia flava*.

INHERITANCE OF ALBINISM IN ORCHIDS.—Mr. C. C. Hurst, F.L.S., wrote:—"Since my last communication I have had an opportunity of examining some plants of *Paphiopedilum insigne* Sanderæ. Much to my surprise I found distinct traces of purple sap in the basal margins of both the old and young leaves. The plants were not in flower, but I am told on good authority that some minute spots are also to be found on the dorsal sepal. In view of this, it would appear that *P. insigne* Sanderæ, so long considered an albino, is in reality a coloured form in which the purple sap is present in minute quantities. In accordance with the provisional scheme suggested in my last note, *P. insigne* Sanderæ will therefore be carrying both the colour factors C. and P., and when mated with albinos may be expected to give coloured hybrids, as it has done in the case quoted by Mr. Rolfe. The result is that all the combinations with *P. insigne* Sanderæ given in Tables A and B (see p. 103 of our last issue) must be cancelled. It would be interesting to know if the two other yellow forms, *P. insigne* Sanderianum and *P. i. Macfarlanei*, recorded as unspotted, are true albinos, and what they produce when crossed."

Mr. Rolfe's theory that the colour reversions are due to the fact that the albinos crossed belong to diverse species, fails to account for the cases in sweet peas, stocks, and other plants where two albino individuals of the same species, variety, and race, may revert to coloured forms when crossed. On the other hand, the conception of complementary colour factors satisfactorily explains all the known phenomena of colour reversions in plants and animals, so far as they have been critically and experimentally studied.

MANCHESTER AND NORTH OF ENGLAND ORCHID SOCIETY.

On April 1st and 2nd the above Society tried a new venture by taking the large St. James' Hall, Manchester, for the purpose of a Spring Exhibition, and the success of the Show was largely due to the Trade members, who stepped grandly into the breach and gave of their best.

Messrs. Armstrong & Brown, Tunbridge Wells, Kent, put up a magnificent group, chiefly *Dendrobiums*, on a stage space about 60 feet by 9 feet. At each end were grouped about 100 plants of well flowered *Dendrobium*

nobile virginale, the centre being tastefully arranged with the best coloured varieties, overhung with palms and arching sprays of *Odontoglossums*. The *D.n. virginale* were about six years old, and I understand were all raised from one seed pod, and reflected the highest credit on the firm. The group, besides being very effective, contained many excellent things, as the following awards will show. *Cymbidium* × *Holfordianum*, a fine flower with greeny yellow sepals and petals and spotted lip, gained a First-class Certificate, as did also *Dendrobium nobile virginale magnificum*, a flower with very broad lip, and *Brassocattleya Thorntonii* var. *Boydiae*. Awards of Merit were given to *Dendrobium* × *Alice Bound* var. *giganteum* (*D.* × *Cassiope* × *nobile virginale*), *D.* × *Geo. Woodhams* (*Rolfeae* × *Cybele*), *Lycaste Skinneri* var. *amœna*, *Lycaste gigantea*, *Cypripedium Braceyanum*, and *Cypripedium hirsutissimum* var. *giganteum*. The group was voted a Gold Medal and an illuminated address.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a beautiful exhibit of mixed plants of their usual high excellence, and gained the Society's Gold Medal. A fine *Odontoglossum*, named "His Majesty," probably a hybrid between *O.* × *amabile* and *O.* × *ardentissimum*, created great interest, and gained a well-deserved First-class Certificate. It was a flower of excellent shape and substance, with a big solid blotch of rich claret on the sepals, petals, and lip. I understand that it passed into the collection of Mrs. Mary Gratrix, of Whalley Range. Another remarkable flower was *Brassocattleya Bradshawiae* (*C. Schroederæ* × *B. Digbyana*), the flower being pure white, with all the green of the latter parent eliminated. This and *Phalænopsis Sanderiana*, Wigan's var., received First-class Certificates. I noted also a fine *Lælio-cattleya luminosa* var. *Golden Glory*, also a good *Odontoglossum* × *Gladys*, *Bulbophyllum Reinwardtii*, &c.

M. Mertens, Ghent, showed a small group of *Odontoglossums*, in which I noted a good *Odontoglossum* × *Gladys*, *O. crispum xanthotes*, *O.* × *Wilckeanum*, &c.

Mr. William Bolton, Warrington, showed some very good forms of *Cattleya Schroederæ* and *Odontoglossums*. I noted *O. crispum Lindeni*, *Cypripedium* × *Wilderspool*, &c. (Silver Medal).

Mr. A.W. Jensen, Linfield, Sussex, staged a fine lot of *Cattleya Schroederæ* and *Odontoglossum crispum* of the true Pacho type, both of excellent quality and of his own importing.

Messrs. Moore & Co., Rawdon, Leeds, had many botanical and curious plants in their group, and I noted *Dendrobium macrophyllum Veitchii*, *Masdevallia Peristeria*, *Epidendrum* × *elegantulum*, *Pleurothallis scapha*, &c.

Ziba A. Ward, Northenden (gr. Mr. Weatherby), staged a charming group of plants, in which *Odontoglossums* predominated, a fine piece of *O.* × *ardentissimum album* gaining a First-class Certificate. I noted

several spikes of *O. × Harryano-crispum*, a fine pan of *Oncidium concolor*, &c., &c. The group gained a Silver-gilt Medal.

Messrs. Sander & Sons, St. Albans, staged a choice group of mixed plants, very striking among them being *Cattleya Schroederæ*, vars. The Bride and Queen Alexandra, also *Cypripedium × Frau Ida Brandt*, *Brassocattleya Empress of Russia*, two very distinct plants of *Odontoglossum × ardentissimum*, and many *Lælio-cattleyas*, &c. (Silver-gilt Medal).

Mr. J. Robson, Altrincham, gained a Silver Medal for a very effective group, containing many fine *Dendrobiums*, *Lælio-cattleya callistoglossa*, a good *Odontoglossum × waltonense*, the distinct *O. × Lambeauianum*, The Sultan, a very dark variety with prominent yellow lip, *O. crispum*, Purple Emperor, *Dendrobium × pallens*, &c.

A. Warburton, Esq., Vine House, Haslingden (gr. Mr. Dalglish), staged a specially fine group of *Cypripediums*, *Cattleyas*, *Odontoglossums*, &c., all well grown and flowered, gaining Silver-gilt and Silver Medals. First-class Certificates were given *O. × Lambeauianum*, The Lady, *O. × Perfection*, *O. crispum*, King of England, a flower of fine shape and blotching, and a distinct *Miltonia vexillaria*, Vine House var., all plants of sterling merit.

J. E. Williamson, Esq., Stretford, gained a Silver Medal for a choice mixed group, in which I noted a good *Angraecum sesquipedale*, several *Odontoglossum cirrhosum*, choice *Dendrobiums*, *Cypripediums*, &c.

Messrs. Wm. Bull & Sons, Chelsea, showed a good three year old seedling *Odontoglossum crispum*, which should develop into a fine flower.

Mr. J. Birchenall, Alderly Edge, showed a new and very distinct variety of *Bollea*, probably an albino form of *B. Lalindei*, and a small plant of the very rare *Seelochilus variegatus*.

H. J. Bromilow, Esq., Rainhill (gr. Mr. Morgan), showed a nice group of *Cypripediums*, which gained two Silver Medals. Many fine forms were included, *Cypripedium × microchilum* var. *Honoræ*, a very pretty flower with a distinct claret stripe on the dorsal sepal and petals, and *C. concolor* Emperor, a pale orange-yellow well-spotted variety, each gained a First-class Certificate, while Awards of Merit went to *C. × Euryades superbum* and *C. × Wootoni*, Rann Lea var.

R. Ashworth, Esq., Ashland Hall, Newchurch (gr. Mr. Fletcher), staged a nice group, chiefly *Odontoglossums*, *O. × Atalanta*, and *O. × Ethiopica* (*crispum augustum × Harryano-crispum*), gaining Awards of Merit. I noted a distinct seedling *Cypripedium × Britannia* (*C. × Gowerianum × ciliolare*). The group received a Silver Medal.

Messrs. J. & A. A. McBean, Cooksbridge, showed some excellent samples of *Odontoglossum crispum*, and very well flowered, gaining a Silver-gilt Medal. I noted a very distinct variety of the *O. c. Bonnyanum* class, but with rich deep spotting, two or three good varieties of *O. × Adrianæ*, &c.

Messrs. Hugh Low & Co., Enfield, gained a Gold Medal for a fine display of Orchids, in which I noted a nice blotched *Odontoglossum crispum*, the markings almost forming a circle, *Epidendrum Eudresio-Wallisii*, *Oncidium olivaceum*, *Lycaste Skinneri alba*, *Cattleya Mendelii alba*, many good *Odontoglossums*, a fine show of *Dendrobiums*, some excellent *Cattleyas*, &c., &c.

W. Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), showed *Cypripedium* × *Dowlingianum*, *C.* × *Hindeanum*, and *Odontoglossum* × *exultans*, the last-named gaining an Award of Merit.

Messrs. Keeling & Sons, Westgate Hill, Bradford, staged a good group of mixed plants, many of them of botanical interest, including *Bulbophyllum Careyanum*, *Masdevallia Estradæ*, *M. Arminii*, *Epidendrum macrochilum*, the quaint and rare *Odontoglossum (Erstedii)*, &c. *Dendrobium* × *chessingtonense* gained an Award of Merit, and the group a Silver Medal.

J. McCartney, Esq., Hey House, Bolton (gr. Mr. Holmes), was awarded two Silver Medals for good groups of choice *Cattleyas*, *Odontoglossums*, *Dendrobiums*, &c. I noted a good *Cattleya Trianae grandis*, *C. Schroederæ albesens*, *Lælio-cattleya Gottoiana*, &c.

The Liverpool Orchid & Nursery Co. gained a Silver-gilt Medal for a fine show of Orchids, which included almost everything in season.

Norman C. Cookson, Esq., Wylam-on-Tyne (gr. Mr. Chapman), gained a First-class Certificate for *Phaius* × *Clive* and an Award of Merit for *Phaio-calanthe delicata*.

Messrs. Cypher & Sons, Cheltenham, staged a fine display of plants and flowers, the best of which were *Brassocattleya Thorntoniana gigantea* with an exceptionally fine lip (Award of Merit), *Lælio-cattleya callistoglossa*, "The Sultan," with a distinct yellow throat (First-class Certificate), *Phaius grandifolius*, very good, *Cattleya intermedia nivea*, a fine plant of *Odontoglossum triumphans* var. *Othello* with six spikes, *O.* × *excellens Gratrixia*, *O. Cervantesii*, *Epidendrum alatum*, &c. (Gold Medal).

Elijah Ashworth, Esq., Harefield Hall, Wilmslow (gr. Mr. Holbrook), made a fine show with a seasonable lot of flowers, the group containing many choice *Odontoglossums*. I noted *Odontioda heatonensis*, the beautiful *Chysis Limminghei*, *Odontoglossum crispum* Queen Victoria, many *Cypripediums*, *Cattleyas*, *Lælio-cattleyas*, *Lycastes*, &c., &c. (Silver Medal).

On both days of the show Mr. Chapman, gardener to Norman Cookson, Esq., exhibited a good number of lantern slides, taken by himself, and gave a brief description or a few interesting remarks as each slide appeared. The greatly enlarged pictures were beautifully coloured, and his "Orchid Chat" was greatly enjoyed by a numerous audience, a Vote of Thanks being heartily accorded.

H. THORP.

DENDROBIUM PHALÆNOPSIS.

THE annexed figure represents a beautiful example of *Dendrobium Phalænopsis*, in the collection of Mrs. B. B. Tuttle, Naugatuck, Conn., U.S.A., bearing twenty-eight flowers on one pseudobulb, and forming quite an elegant picture. It is reproduced from a very beautiful photograph sent to us by Mr. M. J. Pope, who has charge of the collection. This beautiful



Fig. 21. DENDROBIUM PHALÆNOPSIS.

species has been known for upwards of a quarter of a century, having been described by Fitzgerald in 1880 (*Gard. Chron.* 1880, ii. p. 38), from specimens which flowered in the collection of Captain Broomfield, of Balmain, Australia, which had been collected near Cooktown, in Northern

Queensland. It was soon afterwards introduced to Europe, but it was not until 1891, when Messrs. Sander obtained a fine importation, through their collector, W. Micholitz, that the species became generally known. Respecting the specific name, Fitzgerald remarked: "I have given this finest of the Australian Dendrobates the name *Phalænopsis*, from the likeness of its flowers to moths, and also their likeness to those of the genus *Phalænopsis*." Soon after its discovery in Queensland it was also met with by Mr. H. O. Forbes, in his adventurous journey to Timor laut, and it is a plant from this source which is figured at t. 6817 of the *Botanical Magazine*. It is now known to occur in several localities in and adjacent to the Torres Straits. It is now one of the best known and most deservedly popular species, its flowers being produced in autumn and winter, at which time they are especially valuable, though in foggy localities they sometimes suffer considerably, being as susceptible to fog as *Calanthes* and *Phalænopsis*. The spikes are also very useful for cutting.

ORCHIDS AT THE GHENT QUINQUENNIAL HORTICULTURAL EXHIBITION AND CENTENARY.

THE sixteenth Quinquennial Horticultural Exhibition of the Société Royale d'Agriculture et de Botanique de Gand opened at the Casino, Ghent, on April 24th last, and the event assumed a special importance because it also celebrated the centenary of the Society's existence, and a special effort had been made to bring together a display worthy of the occasion. A particularly interesting feature was the production of a model of the old inn in which the first exhibition of the Society was held, in 1809, and which was complete to the most minute details. In this building were displayed living plants of the various species which were exhibited at that meeting, as nearly as could be ascertained, and side by side with them were exhibited plates of many of them, published at about the same period. It need hardly be explained that Orchids formed no part of that early exhibition, so we must devote our attention to those exhibited at the present meeting.

The Jury was, as usual on these occasions, an international one, and the names of the three sections devoted to Orchids (taken from the official list) was as follows: Section 2, Major G. L. Holford, President, Mr. J. O'Brien, Secretary, and Messrs. O. Beyrodt, De Barri Crawshay, R. Allen Rolfe, P. M. Binot, W. Thompson, and Baron von Boetzelaer; Section 3, Mr. H. T. Pitt, President, Mr. Ch. Dietrich, Secretary, and Messrs. J. S. Moss, J. Gurney Fowler, Dr. Capart, F. De Bievre, R. Waroqué, O. Fanyau, and Chevalier van Ufford; Section 4, M. F. Lambeau, President, Mr. S. H. Low, Secretary, and Messrs. J. Robson, F. Sander, A. Peeters, G. Vincke, L. Linden, Ch. Maon, and R. Lemoinier.

Eighty-two classes were devoted to Orchids, but in many cases there were no exhibits, and there were only twenty-seven cases in which awards were made, and in several of these only a single group was exhibited. It was noticeable that the award of a Gold Medal for a collection of the most numerous species of Orchids did not attract a single exhibitor. Some sterling groups, however, were staged not for competition, particularly a remarkably fine group sent by Major G. L. Holford, and a marvellous group of hybrid *Odontoglossum* from M. Ch. Vuylsteke, by far the finest which has ever been exhibited. The non-competitive groups counterbalanced to a great extent the small number of entries in the other class, and the general opinion was that the Orchids staged were superior to anything yet staged at Ghent. We may take the competitive groups first.

The Gold Medal offered by His Majesty the King of the Belgians, for the best and most varied collection of Orchids, limited to Amateurs, was won by M. Firmin Lambeau, of Brussels, with a remarkably fine group, which occupied the whole of the central stage at one end of the gallery. It contained a beautiful series of *Odontoglossums*, *Cattleyas*, *Miltonias*, hybrids of *Brassavola Digbyana*, and numerous other fine things, specially noteworthy among them being the charming forms of *Odontoglossum* × *Lambeauianum*, *Helleputianum* and *La Tribune*, both of excellent shape and very handsomely blotched, *O. crispum coloratum*, *O. c. eminens*, and *O. c. Madouxianum*, three very richly coloured forms, some good *O. × ardentissimum*, *O. × exultans*, *O. × Notteanum* (*Wilckeanum* × *loochristiense*), a bright yellow, well-spotted flower, most like the latter, some pretty forms of *O. × Adrianæ*, a good *Odontioda heatonensis*, very fine specimens of *Cochlioda Noetzliana*, *C. vulcanica*, and *C. rosea*, with numerous racemes, noble examples of the large and richly coloured *Miltonia vexillaria gigantea* and *maxima*, *M. v. Reginae*, a fine flower with white lip, *M. × Bleuana amabilis* and *nobilior*, in excellent condition, well-flowered examples of *Maxillaria luteo-alba* and *M. Sanderiana*, the brilliant *Renanthera Imschootiana*, *Dendrobiums Devonianum*, *densiflorum*, *atroviolaceum*, and others, *Zygopetalum × Perrenoudi*, *Cymbidium Lowianum concolor*, *Cattleya intermedia alba* with 20 flowers, some good *C. Lawrenceanum*, *C. Skinneri*, *C. × Louis Chaton*, the beautiful *C. × Suzanne Hye de Crom*, some good *C. Schroederæ* and *Mendelii*, *Oncidiums Marshallianum* and *concolor*, *Brassocattleya nivalis*, the richly-coloured *B.-c. Peetersiæ* (*C. Warscewiczii* × *B.-c. Madame Ch. Maron*), some good *B.-c. Mrs. J. Leemann*, *B.-c. Reneiæ* (*Læliocattleya luminosa* × *B.-c. Mrs. J. Leemann*), having flowers mottled with yellow, *Brassolælia Eugene Boulet*, a pretty hybrid from *Cattleya Schroederæ* × *Lælia Cowanii*, with light yellow flowers larger than in the latter, *C. Mossiæ* × *L. flava*, a pretty pink flower with the lip much crisped and rich purple in front, *Phalænopsis amabilis*,

and others much too numerous to mention, the whole being very tastefully arranged.

For the best and most varied collection of exotic Orchids (Amateurs), the first prize was awarded to M. Ch. Dietrich, Brussels, for a very beautiful group, including a number of good *Odontoglossums*, *Miltonia vexillaria gigantea* and *M. × Bleuana nobilior*, a very good *Lælio-cattleya* Captain Percy Scott, L.-c. *Dominiana*, *Choletiana*, *Ernesti*, and *Pallas*, *Renanthera Imschootiana*, *Zygopetalum × Perrenoudi*, *Phalænopsis amabilis* and *Schilleriana*, *Cochlioda rosea*, *Oncidium Marshallianum*, *Cattleya × Louis Chaton*, *Brassocattleya Mrs. J. Leemann*, *Cymbidium Devonianum*, &c.

In a similar group for nurserymen, the first prize was awarded to M. Emile Praet, Mont-St.-Amand, the more noteworthy plants consisting of some good *Cattleya Schröderæ*, *C. S. alba*, a very fine *C. Trianæ formosa*, *C. Lawrenceana*, *Lælia purpurata*, *Odontoglossums × Lambeauianum*, *× Rolfeæ*, *Pescatorei*, *× Wilckeanum*, and some good *crispum*, a fine *Cochlioda rosea*, *Oncidium Marshallianum*, *Harrisonianum*, *maculatum*, and *sarcodes*, *Phaius × Norman*, *Cymbidium eburneum*, *Lælio-cattleya Choletiana* and others, *Phalænopsis Schilleriana*, *Cypripediums*, &c.

For the best 30 Orchids, the first prize was awarded to M. Th. Pauwels, Meirelbeke, his most noteworthy plants being a very fine example of *Cattleya Mendelii*, covered with flowers, some good *C. Lawrenceana*, *Trianæ*, and *Schröderæ*, with *C. Skinneri* and a fine *C. Lueddemanniana*, *Angræcum sesquipedale*, *Phalænopsis Schilleriana*, *Miltonia × Bleuana*, *Lælia cinabarina*, *Zygopetalum × Perrenoudi*, *Odontoglossum × excellens*, a very good *O. × amabile*, *O. × Ossultoni*, *Selenipedium caudatum roseum*, *Masdevallia × Pourbaixii*, *Dendrobiums*, &c.

For the best new Orchid of recent introduction and not yet in commerce, M. Maurice Verdonck, of Gentbrugge, staged a fine example of *Dendrobium Bronckhartii*. The jury decided that the species was already in commerce, but recommended the award on the sole ground of novelty and merit, and the prize was consequently awarded.

For the best collection of Guatamalan and Colombian Orchids, M. Verdonck gained the Gold Medal, his group including *Odontoglossum Uroskinneri*, *Cervantesii*, *gloriosum*, *Edwardii*, *cirrhosum*, *Hallii*, *Pescatorei*, *pulchellum*, *crispum*, *luteopurpureum*, and others, *Cattleya Skinneri* and *Mendelii*, *Epidendrum Wallisii*, a good series of *Lycaste Skinneri*, *Trichopilia tortilis*, *Masdevallia Chimæra*, *ignea*, and others, *Oncidium cucullatum*, *maculatum*, and *leucochilum*, *Epidendrum radicans*, *Arpophyllum giganteum*, *Maxillaria variabilis*, *Miltonia vexillaria*, *Scaphosepalum ochthodes*, *Ada aurantiaca*, &c.

For the best Brazilian collection, M. Verdonck received a similar award, his group containing good examples of *Oncidium sarcodes*, *concolor*,

Marshallianum, varicosum, and others, *Lælia purpurata*, *Cattleyas intermedia* and *Leopoldi*, *Stelis* sp., *Bifrenaria Harrisoniæ*, *Zygopetalum rostratum*, *Stanhopea guttulata*, *Sophronitis grandiflora*, &c.

For the best collection of Indian Orchids, M. Verdonck again secured the Gold Medal, the group including fine examples of *Phalænopsis amabilis Rimestadiana*, *Renanthera Imschootiana*, *Dendrobium barbatulum*, *D. Wardianum*, *D. Bronckartii*, and many others, *Vanda tricolor*, *Cypripediums Curtisii*, *Appletonianum*, *tonsum*, and others, *Cœlogyne cristata alba*, *Cymbidium Lowianum concolor*, &c. The Madagascar *Angræcum modestum* had to be excluded from the group.

For a good group of *Anæctochilus* and allied genera, the Gold Medal was awarded to M. Pynaert van Geert, for a small group of several species.

For the best group of twenty-five *Cypripediums* and allied genera (Amateurs), the second prize went to M. Maes-Braeckman, Mont St. Amand, for a good group of familiar species and hybrids. The first prize was not awarded.

In a similar class for nurserymen, two groups were staged, the first prize being awarded to Messrs. Janssens & Putzeys, who showed some good forms of *C. × aureum*, *C. × Euryades*, *C. Mastersianum* and *C. insigne Sanderæ*, with *Selenipedium × Dominicanum*, &c. The second prize went to M. Pynaert van Geert for a varied collection.

For a collection of twelve *Dendrobiums*, M. Verdonck gained the first prize, the group including excellent examples of *D. nobile*, *D. nobile virginale*, *D. barbatulum*, *D. crepidatum*, *D. Jamesianum*, *D. primulinum*, *D. Bronckartii*, &c.

For the best twenty-five *Dendrobiums*, M. Verdonck again secured the first prize with a very good group.

In an Amateurs' class for the best collection of *Cattleyas* and *Lælias* in well-cultivated examples, there was no entry, but in the corresponding class for Nurserymen the first prize was awarded to M. Vincke-Dujardin, Bruges, for a most brilliant group, which included a charming series of *C. Mossiæ*, the variety *Reineckeana*, and a form having slate-blue veining on the lip, some good *C. intermedia alba*, *C. Lawrenceana*, *C. × Vulcain*, and a richly coloured hybrid from *C. Mossiæ × resplendens*, most like the latter. *Lælio-cattleya Elinor* (*L. × Coronet × C. Schröderæ*), and a very fine *L.-c. Schilleriana*, a richly coloured hybrid from *C. Skinneri × Lælia tenebrosa*, *Brassocattleya Digbyano-Schröderæ*, *B.-c. Madame Ch. Maron*, a good white *Lælia anceps*, and other showy things.

For the most beautiful *Lælia* or *Lælio-cattleya* not yet in commerce, M. F. Lambeau was awarded the first prize, with *Brassocattleya Peetersiæ* (*C. Warscewiczii × B.-c. Madame Ch. Maron*), a very rich rose-purple flower, with darker fringed lip and a brilliant yellow throat.

For the most beautiful hybrid *Cattleya*, M. Lambeau was also successful, with the beautiful albino *C. × Suzanne Hye de Crom*.

For the best lot of *Masdevallias*, the first prize was gained by M. Joseph de Hemptinne, St. Denis-Westrem, his group including *M. ignea*, *Veitchiana*, *× splendidula*, *Chimæra*, varieties of *coccinea* and others.

For the best collection of fifty *Odontoglossum crispum*, the second prize went to M. Arthur Muesser, Brussels, whose group consisted chiefly of white and rosy forms. It was the only group, and the first prize was not awarded.

For the best twelve *Odontoglossums* obtained from seed, M. de Graire, of Amiens, gained the first prize, with a most beautiful series, including some handsome blotched seedlings of *O. crispum*, *O. c. Orange Queen* having the markings of a distinct shade of orange-brown, *O. × ardentissimum* vars. *President Callier*, *Cavour*, and *Emperor of India*, the latter a grand form with clear mauve-purple blotching and broad white margin, *O. × Arlequin*, *O. × (Fascinator × triumphans)*, a pretty intermediate form, having well-blotched light yellow flowers, with the lip most like *O. triumphans*.

The same exhibitor staged two beautiful plants of the brilliant *Odontioda Devossiana*, in the class for the best new generic hybrid, which by some unfortunate oversight was not placed before the Jury, though the first prize was subsequently recommended.

For the most beautiful *Odontoglossum* obtained from seed, M. F. Lambeau gained the first prize, with *O. crispum coloratum*, a very richly-coloured form, with well-toothed petals.

For the most beautiful hybrid *Odontoglossum*, M. Lambeau also gained the same award, with *O. × ardentissimum memoria Lambeauiæ (Pescatorei × crispum Stanleyi)*, a very fine form, having solid purple sepals and petals, broadly bordered with white.

In the section devoted to Orchids remarkable for culture and floriferousness only a quarter of the classes were filled.

For the most beautiful *Cymbidium*, M. J. de Hemptinne obtained the first prize, with a remarkable plant of *C. Lowianum*, bearing over thirty racemes, and forming quite a picture.

For the most beautiful *Dendrobium*, M. Verdonck gained the first prize with a good specimen of *D. nobile*.

For the most beautiful *Masdevallia*, M. J. Hemptinne won the first prize, with a very large plant of *M. × Pourbaixii*, crowded with flowers.

For the most beautiful *Miltonia*, M. F. Lambeau won the first prize, with an excellent example of *M. × Bleuana* bearing eight fine racemes.

For the best *Odontoglossum* other than *O. crispum* the first prize went to M. de Smet-Duvivier, Mont-St.-Amand, but we omitted the name.

For the most beautiful Vanda, M. Th. Pauwels gained the first prize, with *V. suavis pallida*, a very beautiful light-coloured variety having the spots entirely green.

In a class for any other exotic Orchid remarkable for culture and floriferousness, small plants of *Epidendrum cochleatum* and *E. atropurpureum* were staged (the latter labelled *E. elongatum*), but no awards were made.

For the most complete collection of Horticultural publications that have appeared during the past century in Belgium, a Gold Medal was given to M. A. Goossens, Auderghem, the group including a beautiful series of pictures from the *Dictionnaire des Orchidées*.

For the most beautiful basket decorated with Orchid flowers, the first prize went to M. Debie-Lachaume, Paris, unanimously, with congratulations of the Jury, and the second to M. Van Haute-Bogaerts, Ghent.

For the best bouquet of Orchids, the last-mentioned exhibitor was awarded the first prize, with congratulations of the Jury.

In the class for dinner table decorations, Orchid flowers were used with marked effect, the first prize going to M. A. Van der Heede, Ghent, who used *Cattleya Schröderæ* intermixed with graceful foliage, and the second to M. Van Haute-Bogaerts, Ghent, who used chiefly spikes of *Odontoglossum*, both groups being extremely graceful.

For an Orchid house twelve mètres long, complete with heating apparatus, a Gold Medal was awarded to Mm. Veuve Buss et fils, for a very well designed structure.

NON-COMPETITIVE GROUPS.

The non-competitive groups formed a very brilliant series, and we may take them in the order of the official list.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), staged a most brilliant and artistically-arranged group, occupying a space of over 300 square feet, at the end of one of the galleries. A fine Œuvre d'Art was awarded, with congratulations. It is impossible to do justice to such a group in the space at our disposal, but a few of the leading features must be mentioned. The forms of *Odontoglossum* were superb, and included about 100 spikes of *O. crispum* in very numerous varieties, one alone bore fifty-two flowers, while the allied species and hybrids were well represented. *Cymbidium* × *eburneo-Lowianum* was a noble example, bearing twenty-four spikes and over 120 flowers, *C. × Lowgrinum*, *C. Lowianum concolor*, and other fine *Cymbidiums* being included. The albino *Cattleya* × *Dusseldorffii* var. *Undine* was represented by fourteen plants, bearing over forty flowers, and with superb forms of *C. Schröderæ*, *Trianae*, *Mendelii*, *Lawrenceana*, *Lueddemanniana*, and various hybrids, made a fine display. *Brassocattleyas* and *Brassolælias* were both numerous

and beautiful, the series containing about sixty plants with 100 flowers. B.-c. Sirius (C. Skinneri $\times$ B. Digbyana), is a very deep purple flower of intermediate size, with the lip fringed, and having a pale whitish throat. Lælio-cattleyas were still more numerous, including such brilliant kinds L.-c. Phryne, Hippolyata, Golden Glory with twenty-six rich yellow flowers, Pizarro, callistoglossa excelsa, with five fine blooms, having the lip of the most intense purple-crimson, Elinor, and among the newer ones L.-c. Lustre (L.-c. callistoglossa $\times$ C. Lueddemanniana), a very large and most richly-coloured hybrid, L.-c. Olivia (L. Jongheana $\times$ C. Schröderæ), a pretty pink flower with large orange-coloured throat, L.-c. Ganymede (L. $\times$ Latona $\times$ C. Schröderæ), a very variable and pretty hybrid, &c. There were also many good Cyripediums, fine plants of Sophronitis grandiflora, one bearing about eighty flowers, Sophrocattleya Chamberlainiana, four good Sophrolælia Phroso superba, Dendrobium Brymerianum, some fine Ada aurantiaca, Miltonia $\times$ Bleuana, and M. Roezlii, Bifrenaria Harrisoniæ, the fine Masdevallia $\times$ Bocking Hybrid, &c.

M. Ch. Vuylsteke, Loochristi, staged a magnificent group of hybrid Odontoglossums, in a large glass case with mirrors behind, and containing about 115 plants, such a group as has never before been shown, an Œuvre d'Art, value 500 francs, being awarded, with the congratulations of the Jury. The blotched forms of O. crispum, $\times$ ardentissimum, $\times$ amabile, $\times$ Rolfeæ, $\times$ eximium, $\times$ percultum, $\times$ gandavense, $\times$ Wilckeanum, $\times$ Lawrenceanum, $\times$ excellens, and others were remarkable, alike for culture and for brilliancy of colour and markings, and those who have seen the smaller groups at the Temple and elsewhere will be able to form some idea of the present one. We can only select a few specially striking forms for individual mention. O. $\times$ maculatissimum (maculatum $\times$ ardentissimum) had a spike of nine flowers, most like the former in shape, the sepals of a peculiar bronzy brown, the petals more blotched and light yellow towards the apex, and the lip white, with a bronzy red blotch and a yellow crest. O. $\times$ Vuylstekeæ Diana had a spike of fourteen flowers of exceptionally clear rich colour. O. $\times$ Wiganianum Lucretia was a brilliant yellow, densely spotted variety. O. $\times$ Laurenceanum triumphale, a very fine and richly coloured form. O. $\times$ formosum var. Diana bore a fine panicle with five side branches and thirty-four beautiful white, very regularly blotched flowers. O. $\times$ gandavense cœruleum presents a remarkable combination of blue and white, with a broad lip in which the Harryanum crest comes out well. O. $\times$ eximium Aglaon is somewhat similar in shade of colour, but has the quite different type of lip of O. $\times$ ardentissimum. O. $\times$ excellens Golden Gem is a very rich yellow form. O. $\times$ egregium Madame Jules Hye de Crom has broad segments of a peculiar bronzy claret hue, with narrow pale margin. O. $\times$ Beaute-cœleste (figured at page 40 of our last

volume) is remarkable for its perfect shape and clear white ground colour, with a few blotches on the sepals and petals only. But we must leave this charming collection, which formed one of the great centres of attraction to visitors.

M. A. A. Peeters, Brussels, was awarded an Œuvre d'Art for a small group of new and rare *Odontoglossums*, including *O.* × *Fascinator*, *Souvenir du Centenaire*, a fine, densely-blotched variety, with three other charming forms of the same hybrid, *O. crispum* *Bijou d'Uccle*, a beautiful white form, with a group of crimson-brown blotches in the centre, forming a zone, the beautifully-blotched *O. c.* *Madouxianum*, *O.* × *ardentissimum* *Cooksonianum* and *O. a.* *Evansianum*, two superbly blotched forms, &c.

A Gold Medal was awarded to M. Noel Bernard, of the University of Caen, for botanical appliances, including a series of photographs, preparations and specimens illustrating symbiosis between Orchid roots and fungi, our report on which must be deferred till next month.

A Gold Medal was given to M. Th. Pauwels, Meirelbeke, for his beautiful group of *Cattleya Lawrenceana*.

A Gold Medal was given to M. de Bievre, gardener to His Majesty, King Leopold, for a remarkably fine specimen of *Cattleya Lawrenceana*, bearing eighteen racemes.

A Silver-gilt Medal was given to M. Emile Praet, Mont-St.-Amand, for a beautiful group of *Cattleya Schroederæ*.

A Silver-gilt Medal was given to the *Gardener's Chronicle*, London, for a fine series of engravings, including many Orchids.

A Silver Medal was given to M. Van de Putte, Ledeberg, for a fine group of *Lycaste Skinneri*.

Messrs. Charlesworth & Co., Bradford, England, staged a choice little group, containing the beautiful *Odontioda Vuylstekeæ* *Albion*, *O.* *Bradshawiæ*, *O.* *keighleyense*, a fine *Miltonia* × *Bleuana*, a very distinct form of *Vanda lamellata*, *Odontoglossum crispum* *Princess of Wales*, *O. sceptrum aureum*, and *O.* × *armainvillierense* var. *Ebor*, a very heavily blotched form.

Messrs. Hugh Low & Co., Enfield, England, sent a few plants of *Cattleya Mendelii*, and a few cut Orchids.

We also noticed an illustration showing the remarkable effect of the fusion of three flowers of *Cattleya Loddigesii* into one, there being three columns, three lips, and eleven sepals and petals, but we omitted to note the exhibitor.

It was remarked, as showing the tendency of modern Orchid culture, that all the novelties were among hybrids, and the only species to which the term "new" fairly applies, was *Dendrobium Bronckartii*.

NOVELTIES.

A RECENT issue of the *Kew Bulletin* contains a thirty-first Decade of New Orchids as follows, the first five being in cultivation :—

LIPARIS TABULARIS, Rolfe (1908, p. 68).—A large-flowered species which bloomed in the collection of H. T. Pitt, Esq., Rosslyn, Stamford Hill, in April, 1906, and at Kew a year later, when a painting was made for the *Botanical Magazine*. It was sent from the Forest Department, Penang, by Mr. C. Curtis, to Mr. H. A. Tracy, of Twickenham. The flowers are dark purple, and the lip orbicular, closely denticulate, and about $\frac{3}{4}$ inch broad.

LIPARIS WARPURI, Rolfe (p. 69).—A curious dwarf species, introduced from Madagascar, by M. Warpur, which has flowered at Kew on several occasions. It has ovate leaves, and short scapes of one or two largish light green flowers.

CIRRHOPE TALUM FASCINATOR, Rolfe (p. 69).—A remarkable plant, introduced from Annam, by Messrs. Sander & Sons, through their collector, W. Micholitz, and flowered at Kew in September last. It is allied to *C. appendiculatum*, Rolfe, but has much larger flowers, which reach a length of six inches, and are striped and marbled with purple on a light green ground. The petals and dorsal sepal are handsomely fringed with long amethyst purple appendages.

CIRRHOPETALUM PAPILLOSUM, Rolfe (p. 70).—An interesting little plant, allied to *C. retusiusculum*, Rchb. f., but differing from all others in its papillose-hispid lateral sepals. It was sent from the mountains round Chiengmai, Siam, by Dr. Arthur Kerr, and flowered at the Trinity College Botanic Gardens, Dublin, in July, 1907. The dorsal sepal and petals are lined with dark purple on a pale ground, and the lateral sepals marbled and speckled with red-brown.

CÆLOGYNE VIRESCENS, Rolfe (p. 70).—Introduced from Annam by Messrs. Sander & Sons, and flowered in their nursery in April, 1907. It has green flowers, and is allied to *C. Parishii*, Rchb. f., but differs greatly in the details of the crest.

GEODORUM PACIFICUM, Rolfe (p. 71).—A native of the Tonga and Solomon Islands, allied to *G. semicristatum*, Lindl.

POLYSTACHYA SMYTHEANA, Rolfe (p. 71).—A native of Sierra Leone, where it was collected by Mr. C. W. Smythe. It is allied to *P. elastica*, Lindl.

POLYSTACHYA LIBERICA, Rolfe (p. 72).—An ally of the preceding, collected in Liberia by Sir H. H. Johnston.

STAUROPSIS WOODFORDII, Rolfe (p. 72).—A Solomon Island species, allied to *S. Warocqueana*, Rolfe, collected by officers of H.M.S. Penguin and by Mr. C. M. Woodford.

STAUROPSIS SOLOMONENSIS, Rolfe (p. 72).—A Solomon Island species, collected by Mr. C. M. Woodford. It is allied to *S. Englerianum*, Kränzl., and is said to be common throughout the Islands.

ORCHIDS IN SEASON.

SEVERAL beautiful flowers are sent from the collection of G. Hamilton Smith, Esq., by Mr. Coningsby. *Cattleya Schröderæ*, Westfield var., is a bright rose-pink form, with the usual yellow disc, which was purchased at a recent sale of the Westfield collection. Two good *C. Mendelii* are from imported plants obtained two years ago from Messrs. Stanley & Co., and one has pink, the other blush white ground colour. *Lælia* × *La Perle* is a form of *L. × Degeestiana*, a beautiful hybrid from *L. flava* and *L. Jongheana*, having white sepals and petals, and a deep yellow lip. It is one of a spike of five flowers.

A pretty rose-tinted form of *Odontoglossum Pescatorei* with a few spots on the segments, contrasts effectively with the typical form. There is also a good form of *O. × Adrianæ*, and two of *O. × Andersonianum*, the latter being heavily blotched with dark crimson and very handsome, and the richly coloured *Oncidium cullatum*, from a plant imported last November. Mr. Coningsby suggests that it might make a very interesting cross with *Odontoglossum crispum* if this could be effected.

A number of fine things are sent from the collection of J. J. Neale, Esq., of Penarth, by Mr. Haddon. There is a very fine panicle of *Renanthera Imschootiana* with four side branches, and an aggregate of forty flowers. Mr. Haddon remarks that the plant grows well in the warm house. There is also a flower of *Scuticaria Hadwenii*, which is said to thrive well on blocks hung on a moist wall close to the glass, where it gets plenty of sun. There are good flowers of *Cattleya Skinneri*, and *C. Lawrenceana*, *Læliocattleya Schilleriana*, *Dendrobium infundibulum*, a fine *D. clavatum*, *D. primulinum*, *Sobralia leucoxantha*, *Rodriguezia secunda*, *Vanda teres*, *Odontoglossum pulchellum*, *Masdevallia leontoglossa*, *M. ludibunda*, *M. caudata*, *M. simula*, *Oncidium micropogon*, *Phragmopedilum × Schröderæ*, *Polystachya tessellata*, or a nearly allied West African species, and a flower that we take to be a form of *Lælia Cowanii*, the whole forming a most interesting series.

Some beautiful *Dendrobiums* are sent from the collection of G. W. Jessop, Esq., Rawdon, Leeds (gr. Mr. Wilkinson). Two flowers of *D. × Euterpe* var. *Olive* (*nobile Sanderianum × Warnianum album*), from the same pseudobulb, are remarkable, one having all the segments heavily tipped with rich rose-purple, and the ground colour flushed with pink, while the other is nearly white with only a slight tinge of purple at the apex of three of the segments. Mr. Jessop can only account for the difference by the coloured

flower opening a fortnight later than the other, under the influence of more sunshine. Another flower from the same cross is a very beautiful example of the typical form. *D. × Cybele giganteum* is a well known and very beautiful hybrid, and *D. barbatulum*, a South Indian species with graceful racemes of white flowers.

A very beautiful *Odontoglossum Pescatorei album* is sent from the collection of W. Waters Butler, Esq., of Edgbaston, Birmingham. It is a true albino, with a pure white flower, the disc deep yellow, and without purple markings.

An enormous flower of *Angræcum sesquipedale* is sent from the collection of Sir Trevor Lawrence, Burford, Dorking, by Mr. White, who remarks that he does not remember to have seen so large a flower before. The lateral sepals measure slightly over $4\frac{1}{2}$ inches long. The spur is not abnormal, measuring $10\frac{1}{2}$ inches long.

A very fine form of *Paphiopedilum niveum* is sent from the collection of E. D. Bostock, Esq., Holly House, Stone, and is one of the finest we have ever seen. There are a few very minute purple dots at the base of the petals. It came out of a recent importation of Messrs. Charlesworth & Co.

A flower of *Odontoglossum × harvengtense*, a natural hybrid between *O. crispum* and *O. triumphans*, is sent from the collection of D. L. Thorpe, Esq., Etterby Scaur, Carlisle. It was purchased as an unflowered *O. crispum*. The spike bears eleven flowers.

Two very pretty hybrid *Odontoglossums* are sent from the collection of R. G. Thwaites, Esq., Streatham Hill. *O. × Ernestii* is a very pretty hybrid from *O. triumphans × Adrianæ*, which was described at page 198 of our last volume. It is fairly intermediate in shape, and the ground colour yellow, and very regularly blotched all over with red-brown. The lip is whitish, with a yellow crest, and a deep brown blotch in front. The other is *O. × Terpsichore*, derived from *O. Pescatorei × Kegeljani (polyxanthum)*, and is a very pretty light yellow flower, with a dark red-brown blotch in front of the crest of the lip. The column wings are round and entire. It is comparable with *O. × waltonense* in general character.

A flower of the rare and beautiful *Oncidium tetracopis* is sent by Messrs. Stanley & Co., Southgate. The plant is said to be bearing upwards of 120 flowers. The species belongs to the *O. macranthum* group, having long twining racemes, and was described by Reichenbach in 1873 (*Gard. Chron.* 1873, p. 915), from dried specimens collected by Senor Baldeviama, and sent to the late Mr. William Bull, the author compares it with *O. cryptocopis*, Rchb. f. The flowers are large, the sepals light brown with a narrow yellow crisped margin, the petals darker on the basal half and yellow at the apex, being also elegantly crisped, while the three-lobed fleshy purple lip has a whitish crest, shaded with light purple, and some yellow behind.

THE HYBRIDIST.

ODONTOGLOSSUM $\times$ GEMMATUM.—This is a very pretty hybrid raised by Messrs. Sander & Sons, from *Odontoglossum* $\times$ *elegans* $\times$ *O. triumphans latisepalum*, and now flowering in their establishment at Bruges. It most resembles *O.* $\times$ *elegans*, having very acuminate segments, but the lip is broader and shows the influence of the other parent. The ground colour is bright yellow, and the sepals and petals heavily blotched with deep brown. There is a trace of the characteristic *O. cirrhosum* shape about the base of the lip, and the apex is very acuminate. The column wings also show some of the same character, but they are much broader, and nearly entire. It is a very graceful hybrid.

ODONTOGLOSSUM $\times$ HIAWATHA.—This is another handsome hybrid now flowering in the same establishment. It was derived from *O.* $\times$ *elegans* $\times$ *O. Harryanum*, and most resembles the latter parent in general character, except that the sepals and petals are more acuminate. Their ground colour is yellow, heavily blotched with brown. The lip is broad, light yellow, and spotted and marked with purple-brown at the base, while the crest is yellow, and has the characteristic *Harryanum* shape. The column wings are broad and somewhat acuminate in front. It should develop into a very fine thing.

ODONTOGLOSSUM $\times$ ARLEQUIN.—This is another very attractive hybrid, which was shown in the group of M. de Graire, of Amiens. at the Ghent Show. Its parents are recorded as *O.* $\times$ *Fascinator* $\times$ *O. triumphans*, and the flowers are clearly intermediate in character. They are good in shape, with the ground colour light yellow, very heavily blotched with light brown, while the lip most resembles *O. triumphans*.

ODONTOGLOSSUM $\times$ NETHERNENSE.—A very charming hybrid, raised in the collection of R. G. Thwaites, Esq., of Streatham Hill, from *O. Hunnewellianum* $\times$ *O. nobile* (*Pescatorei*). It is comparable with *O.* $\times$ *Adrianæ* in general character, but the lip is more distinctly pandurate, and the ground colour white, while the sepals and petals are very densely blotched all over with brown. The lip is broadly pandurate and white, very prettily fringed, with an irregular brown blotch in front of the yellow crest. The column wings are broad and entire. It is a very beautiful little hybrid.

PAPHIOPEDILUM $\times$ VILLOSO-ROTHSCHILDIANUM, VAR. GAIETY.—A brightly coloured and very beautiful variety, now in the collection of W. Thompson, Esq., Walton Grange, Stone, having been obtained from Messrs. Sander & Sons, Bruges, where we saw it bearing four beautiful flowers. The parents were *P. villosum* and *P. Rothschildianum*, whose characters are well combined in it. What gives it such a distinctive appearance is the

deep yellow ground colour, on which the red-brown stripes show up with special brilliance. The basal third of the dorsal sepal, the upper halves of the petals, and the front of the lip are suffused with dark brown, but elsewhere the stripes stand out very distinctly. We should suspect that the villosum parent was *P. villosum aureum*.

CHYTROGLOSSA MARILEONIÆ.

A VERY interesting little Orchid has appeared in a Brazilian importation of Messrs. Sander & Sons, and is now flowering in their establishment at Bruges, which proves to be *Chytroglossa Marileoniæ*, described by Reichenbach in 1863 (*Hamb. Gartenz.* 1863, p. 546). It belongs to the tribe Oncidiæ and is allied to *Ornithocephalus* and *Zygostates*. The plant grows in tufts on the slender branches of trees, in this respect resembling some dwarf *Masdevallia*, and produces short pendulous racemes of six to about twelve flowers. The sepals and petals are spreading and light green, and the lip three-lobed, with white side lobes, and a pair of dark purple blotches near the base, with a few smaller spots. R. A. R.

NOTES.

A MEETING of the R.H.S. will be held at the Royal Horticultural Hall, Vincent Square, Westminster, on May 12th next, when the Orchid Committee will meet at the usual hour, 12 o'clock noon.

The Great Annual Flower Show will be held in the Inner Temple Gardens, Thames Embankment, on Tuesday, Wednesday, and Thursday, May 26th, 27th, and 28th. The Orchid Committee will meet at 10.30 a.m. on the first day, and the Exhibition will open to Fellows and the public at 12 o'clock. Class I. is devoted to Orchids, and a number of Silver Cups and Medals will be awarded, according to merit.

Owing to the limited space at disposal, the extent of the groups is limited, in the case of Orchids to 200 square feet each.

Exhibitors please note:—"The Council desire that all groups should be less crowded, and that masses of colour should be broken up by the use of green foliage. It would be far better if exhibitors would be content to show less and confine it to the best of their produce only." There is also the salutary condition that "All plants must be named."

Entries for groups, &c., close on Friday, May 15th, but single plants for Certificate may be entered up to May 21st, but not later.

The Manchester and North of England Orchid Society will hold a

meeting at the Coal Exchange, Manchester, on May 14th, this being the last meeting of the Society's year. The Orchid Committee meets at noon, and the exhibits are open to inspection from 1 to 4 p.m. The annual meeting will be held in the afternoon of the same day.

ORCHID PORTRAITS.

ADA AURANTIACA (specimen).—*Gard. Chron.*, 1908, i. p. 247, fig. 108.

BULBOPHYLLUM BINNENDIJKII, J. J. Sm.—*Bot. Mag.*, t. 8187.

CORYANTHES BUNGEROTHII, Rolfe.—*Oest. Gart. Zeit.*, 1908, pp. 138, 139, fig. 14.

CYMBIDIUM EBURNEUM (specimen).—*Rev. Hort. Belge*, 1908, p. 72, fig. 11.

CYMBIDIUM SANDERI SPLENDENS.—*Gard. World*, 1908, p. 231, with fig.

CYPRIPEDIUM × HELEN II., WESTONBIRT VAR.—*Journ. Hort.*, 1908, i. p. 395, with fig.

DENDROBIUM × CYBELE.—*Journ. Hort.*, 1908, i. p. 327, with fig.

DENDROBIUM REGIUM, Prain.—*Rev. Hort. Belge*, 1908, p. 144, with plate.

EULOPHIELLA PEETERSIANA.—*Gard. Mag.*, 1908, p. 267, with fig.

LÆLIA ANCEPS SANDERIANA (specimen).—*Gard. Chron.*, 1908, i. p. 217, with suppl. plate.

LÆLIA ANCEPS WADDONENSIS.—*Journ. Hort.*, 1908, i. p. 349, with fig.

MILTONIA VEXILLARIA LEOPOLD II.—*Trib. Hort.*, 1908, p. 284, t. 103.

ODONTOGLOSSUM CRISPUM VAR. PERFECT GEM.—*Gard. Chron.*, 1908, i. p. 239, fig. 104.

ODONTOGLOSSUM × GLADYS.—*Journ. Hort.*, 1908, i. p. 371, with fig.

ODONTOGLOSSUM × ROLFEÆ MELEAGRIS.—*Journ. Hort.*, 1908, i. p. 349, with fig.

PHAIUS × CLIVE.—*Gard. Mag.*, 1908, p. 279, with fig.

VANDA SUAVIS PALLIDA.—*Journ. Hort.*, 1908, i. p. 305, with fig.; *Garden*, 1908, i. p. 188, with fig.

ANSWERS TO CORRESPONDENTS.

[Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An ADDRESSED postcard must be sent if a reply by post is desired (abroad, reply postcards should be used). Subjects of special interest will be dealt with in the body of the work].

A. E. B. *Odontoglossum cirrhosum*, a nice clear white lightly spotted form. We should think it is worth taking care of.

O. N. W. Probably *Denrobium* × *dulce* (*Linawianum* × *aureum*), though it may be *D. × Ainsworthii roseum* (*nobile* × *aureum*).

G. W. J. A small form of *Phaius Wallichii*, Lindl.

T. H. C. *Odontoglossum* × *Adrianæ*, light and dark forms of this variable, and very pretty hybrid between *O. crispum* and *O. Hunnewellianum*. Certainly worth taking care off.

Photos received with thanks. I. B.

A number of notes have been unavoidably postponed.

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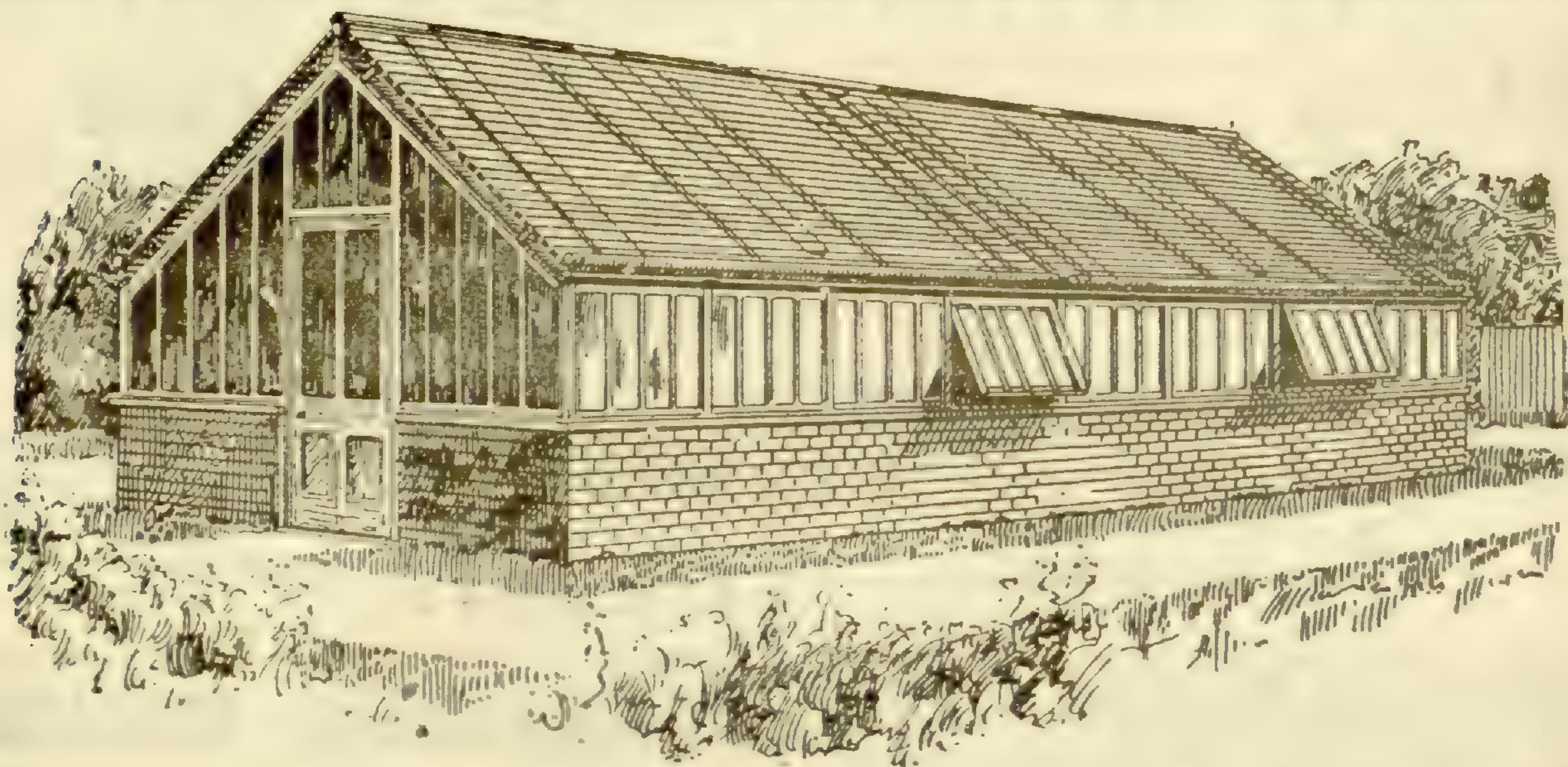
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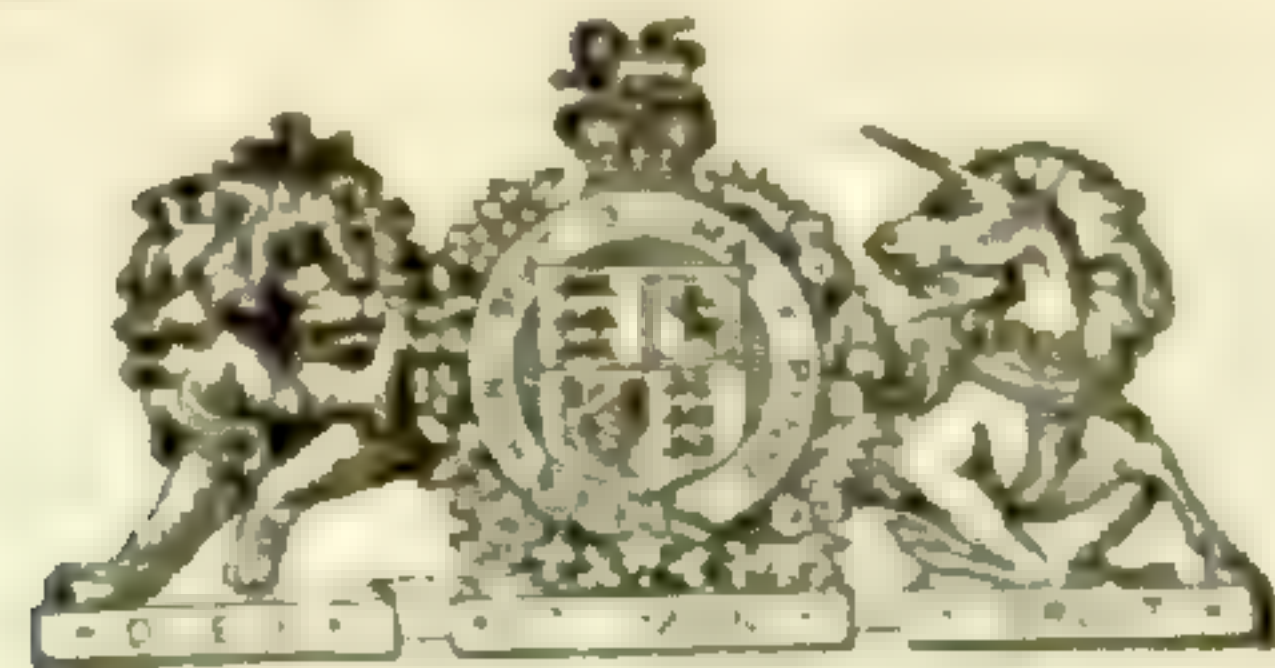
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VOL. XVI.]

JUNE, 1908.

[No. 186.]

THE ORCHID REVIEW:

An Illustrated Monthly Journal of Orchidology.

Contents.

	PAGE		PAGE
Answers to Correspondents ...	192	Odontoglossum × Crawshayanum, Thompson's var. (fig. 24) ...	177
Bulbophyllum mirum ...	190	Odontoglossum crispum var. Leonard Perfect (fig. 23) ...	172
Calendar of Operations for June ...	166	Odontoglossum Hallii var. nigrum (fig. 25) ...	177
Cypripedium Thunbergii ...	186	Odontoglossum × maculatisimum (fig 22) ...	169
Disa longicornu ...	165	Orchid Portraits ...	191
Epidendrum pentotis ...	189	Orchids at Ghent ...	161
Hybridist ...	185	Orchids in season ...	188
Odontioda Charlesworthii ...	185	Societies ...	170
Odontioda St.-Fuscien ...	185	Manchester and North of England Orchid ...	174
Odontoglossum × Andinella ...	185	Royal Horticultural ...	170
Odontoglossum × hibernicum ...	186	The Temple Show ...	178
Odontoglossum × Nerissa ...	185		
Lælio-cattleya Oliveri ...	187		
Notes ...	190		

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THE ORCHID REVIEW.

VOL. XVI.]

JUNE, 1908.

[No. 186.

ORCHIDS AT GHENT.

VISITORS to Ghent during the week of its famous Quinquennial Show naturally take the opportunity of seeing some of its numerous horticultural establishments, and there are at least two in the neighbourhood of the old city in which Orchids receive special attention, which we had the pleasure of seeing. We shall mention them in the order of our visit.

The establishment of M. Th. Pauwels, at Meirelbeke, is famous for the recent importation of *Cattleya Lawrenceana*, which has again made that fine old species common in our collections.

The Orchid houses, ten in number, form a compact block, and are about 100 long, and well adapted to their requirements in every respect. The first house entered was a *Cattleya* house, which contained a sturdy lot of healthy plants of all kinds, a number of very good *C. Schroederæ* being in flower. There were also some *Oncidium oblongatum* in spike, and a batch of *Scuticaria Steelii*, from British Guiana, one plant of which has a fine self-fertilised capsule, from which it is hoped some vigorous seedling plants may be obtained.

The next two houses were largely devoted to seedling *Cattleyas* and *Lælio-cattleyas*, of which there are some thirty thousand in all stages in the establishment. Here also we saw a lot of good plants of *C. Lawrenceana*, one bearing a capsule, some *Phalænopsis Schilleriana*, *Lycaste Skinneri*, *Cypripedium niveum*, a fine *Epidendrum radicans*, *Vanda Bensoni*, and a lot of other interesting things. Three seedling plants of *Cattleya labiata* were pointed out, germinating at the base of the old sheath at the apex of the pseudobulbs of imported plants. The latter when received were cleaned up, dipped in XL All insecticide to destroy insects, and then potted up, and these seedlings are said to be from native seeds which had lodged there before the plants were imported. A lot of *C. Schilleriana* seedlings were pointed out, and a batch from *Lælia rubescens* crossed with a large form of *C. Trianæ*.

Next came two houses of *Odontoglossums*, in which were a lot of *O. crispum* in flower, both from the Pacho and Velez districts, and Mr. Pauwels pointed out the more erect spikes of the former, and the greater

substance of the flowers, but a greater proportion of "starry" forms. The Velez type has whiter flowers, of rounder shape, with less substance, and more arching spikes. M. Pauwels finds *O. gloriosum* as well as *O. Hunnewellianum* in importations from the Velez district. It was interesting to find that M. Pauwels, who has been in the districts mentioned—which are widely separated—was able to confirm, from personal observation, the remarks of M. Fl. Claes published some time ago. *O. luteopurpureum*, however, is not generally found here, if at all, and M. Pauwels says that it is where the *O. crispum* climate merges into that of *Cattleya Mendelii*, that *O. luteopurpureum* occurs, also with some *O. × Adrianæ*. Some very interesting information is steadily accumulating as to the distribution of these beautiful plants. In the houses mentioned we saw many good *O. triumphans* in flower, including one very yellow form, with *O. Uroskinnei*, and various others. From the Pacho district were pointed out two good rose-coloured forms of *O. crispum*, *O. × Andersonianum*, and a very pretty var. *Ruckerianum* with a spike of fourteen flowers.

A batch of seedling *Odontoglossums* was seen in the next house, about 5,000 of them in various stages, from the smallest upwards, some of them seeming quite at home on the outsides of the pots. And there were other signs of hybridisation. For example a capsule of *Odontoglossum Edwardi* × *Cochlioda Noëtzliana* was just bursting, and there was a good capsule of *Cymbidium insigne* × *C. Lowianum* concolor, while capsules of *Odontoglossum* and others were noticed. In flower we saw some good *O. crispum*, *O. gloriosum*, *O. Hunnewellianum*, a fine *O. × Vuylstekei*, *Masdevallia coccinea*, &c. It was curious to see a plant of *Oncidium saltabundum*? from the *O. Harryanum* district, which had been three years in spike, and had some young plants growing on it, one of them with four leaves.

The *Phalænopsis* house contained a good batch of *P. Sanderiana* and others, with a lot of seedling *Cattleyas*, &c., in various stages. The succeeding *Vanda* house contained a good batch of *V. cœrulea* and *V. teres*, *Cypripediums*, including many varieties of *C. insigne*, a batch of *Dendrobium Wardianum*, and others. In flower were *C. glaucophyllum* and *C. niveum*, with a fine *Miltonia* × *Bleuana splendens*, bearing two spikes and twelve flowers, and *M. Roezlii*, the latter bearing a few capsules. There were also some seedling *Cypripediums*, capsules of *C. insigne* *Sanderæ*, &c., with a nice batch of seedlings from *Anguloa Clowesii* × *Lycaste Skinneri*, between one and two years old, which should throw an interesting light on the disputed origin of *Angulocaste Bievreana*.

In the remaining houses we noted many more *Cattleyas*, including some fine *C. Mendelii* and *Lawrenceana* in flower, one of the latter bearing as many as fourteen spikes. One spike of this bore eight flowers, and M. Pauwels stated that he had seen one with nine flowers. There was also a

light rosy-lilac variety, the only one seen in the whole importation. A large plant of *Cypripedium Rothschildianum* was throwing up five spikes, and will form a picture when the flowers expand. *Miltonia Warscewiczii* was in flower, and *M. spectabilis Moreliana* bore a capsule as the result of crossing with *Odontoglossum crispum*. *O. platytilum* was also in bloom, and in proof of its anomalous character *M. Pauwels* pointed out that it will hybridise with *Miltonia* but not with *Odontoglossum*. *O. ramossimum*, too, was in flower, and we saw a few seedlings from it crossed with *O. crispum*. Batches of imported *Oncidium bicallosum* and *splendidum* were noted, the latter being remarkably strong, and, as these plants do not always succeed, we may note that *M. Pauwels* recommends keeping them warm and dry when at rest. We also saw some *Oncidium concolor* and *Cattleya intermedia* coming into bloom, and a very sturdy plant of *Cœlia macrostachya*. In a large tub in one of the *Cattleya* houses was a large plant of the beautiful blue *Utricularia Humboldtii*, with three spikes, and though not an Orchid we mention it, as it came home with the importation of *Cattleya Lawrenceana*.

An ingenious method of catching ants was pointed out. Dry leaf mould is mixed with a little sugar, and placed at the bottom of a small tin box, a wire then being inserted through a hole in the lid, by which the ants are able to reach the attractive food. The mould is turned out periodically and the ants destroyed, a fresh supply of the bait being placed in the box.

But we must conclude our notes by congratulating *M. Pauwels* on the many interesting features of interest the establishment contains, and on the excellent culture everywhere apparent.

The establishment of *M. Ch. Vuylsteke*, at *Loochristi*, may be termed the home of hybrid *Odontoglossums*, and on looking through the numerous houses devoted to them it was difficult to realise that over a hundred of the choicest were away at the Show, so numerous were the fine hybrids in bloom.

The houses are about 65 feet long, very numerous, and compactly arranged on either side of a central walk, with lath roller blinds at the top and sides, ample arrangements for ventilation, cinder paths, and every facility for good culture, and the health and vigour of the plants is excellent in every respect, from the oldest to the youngest. The atmospheric conditions are under complete control at all times, and herein lies the great secret of success. In answer to an enquiry we were informed that *Polypodium* fibre and sphagnum are alone used as a compost. It is difficult to do justice to such a collection in a short article, on account of the wealth of material, and the profusion of handsomely blotched forms seen in flower can only be indicated in general terms. The varieties of *O. × arden-*

tissimum, $\times$ Wilckeanum, $\times$ Lambeauianum, $\times$ loochristiense, $\times$ crispum-Harryanum, Rolfeæ, &c., were all superb, as well as various forms derived from the intercrossing of the hybrids themselves, and with the parent species, whose history has for the most part yet to be written.

Seedlings were observed in every stage of development, and it may here be remarked that the shortest time from germinating to flowering that has been observed is eighteen months, a really remarkable record, which could only be obtained under perfect cultural conditions. The size of some seedlings pointed out as being only one year old was extraordinary. We must now give a few details, chiefly following the order of our notes.

A remarkable amount of variation has been observed between seedlings from the same capsule, a few examples of which were pointed out, but we had not time to record the details, and we hope that M. Vuylsteke may give us a few particulars later on, for it is a most interesting question, both to the breeder and to the student of heredity. *O. cirrhosum* $\times$ *ardentissimum* presented a very great range of variation, some having a white ground colour and being most like the former in every respect, while others were broader and very richly-blotched.

Some of the spikes were enormous, and a plant of *O. x altum* bore a fine panicle, on which we counted seven side branches and fifty flowers, while a form of *O. x loochristiense* was remarkable for a beautiful zone of colour on the sepals and lip, but clear yellow unblotched petals, forming a most elegant contrast. *O. crispum* $\times$ *ardentissimum* gives a very richly coloured hybrid of excellent shape, and among the plants of *O. ardentissimum* in bloom was one with a spike four feet long, and bearing twenty-one flowers. *O. Pescatorei* $\times$ *ardentissimum* gives a very pretty hybrid with a clear white ground, and much regular purple blotching, of which many were in bloom. A very sturdy plant of *O. x Wilckeanum* was bearing three spikes, of 17, 15, and 14 flowers, of fine shape and colour, forming quite a picture. The original plant of *O. x Rolfeæ* was pointed out, in fine condition, now one among a host of others, and all equally beautiful.

We then entered a house one side of which was occupied by a large batch of *Miltonia* seedlings, some of which had reached flowering size. The other side of the house was filled by an enormous batch of *Odontoglossum* $\times$ *Rolfeæ* $\times$ *ardentissimum*, already of good size, and likely to yield some of the finest hybrids imaginable. Much is expected of this batch of seedlings.

The imported plants were naturally rather eclipsed by such a display of seedlings of the choicest parentage, yet we saw a lot of *Odontoglossum* *crispum* and *triumphans*, a good many being in flower, together with plants of *O. gloriosum*, *Pescatorei*, *sceptrum*, $\times$ *Adrianæ*, and various others, also a number of *Cochlioda rosea*, *Ada aurantiaca*, *Masdevallia* $\times$ *Pourbaixii*, a lot of the usual brightly-coloured species, *Cymbidium Lowianum*, &c.

There were also various *Cattleyas* and *Cypripediums*, a number being in bloom, with some good *Phalænopsis amabilis Rimestadiana*, *Læliocattleya Schilleriana*, *Maxillaria Sanderiana*, and many other interesting things which we passed through very hurriedly.

In some way we missed the *Odontiodas*, which we hoped to have seen, but there was not time for everything, and an opportunity for this may present itself on some future occasion. Such a brilliant series of *Odontoglossums* we have never seen, and M. Vuylsteke must be congratulated on his success in a group which for so long seemed to defy the efforts of the hybridist. It helps one to realise to some extent why hybrid *Odontoglossums* are common in nature, where the species grow intermixed, and it may yet help us to clearer views of their origin.

DISA LONGICORNU.

THIS rare and beautiful lilac-blue *Disa* has just flowered at the Royal Botanic Garden, Glasnevin, and has been sent to Kew for determination. Mr. F. W. Moore remarks that it was purchased of Messrs. Protheroe and Morris, in March, 1906, under the name of *Disa rosea*, but proves very different on flowering. Both the species occur on Table Mountain, and as *D. longicornu* has never been recorded from elsewhere we may assume that the present plant came from that locality. The species was discovered here, by Thunberg, as long ago as January, 1773. "Having got to the top," he remarks, "we were recompensed for our trouble by a great number of rare plants, especially of the *Orchideæ*, as they are called, which I never afterwards could meet with either here at other seasons, or indeed at all on any other mountain." Among them were the brilliant scarlet *Disa grandiflora*, and the black and white *D. melaleuca*. And he adds, "with great difficulty, and at the hazard of my life, I got for the first and last time the blue *Disa longicornis*, which is as beautiful as it is singular in form. This last plant grew in one spot only, on a steep rock, and so high up that in order to come at it, after we had clambered up the sides of the rock as high as we could, I was obliged to get upon the shoulders of M. Sonnerat, when, with a long stick, I beat down five of these plants, the only specimens then in bloom." Mr. Bolus suggests that the locality may have been the precipice sometimes called the "Tremble Krantz," where he has found it growing in profusion in some seasons. He gives the habitat as among moss or grass in clefts of steep rocks, on the sides turned from the sun, where the water drips in early summer, and the altitude as 2,100 to 3,000 feet. The plant grows from half to nearly a foot high, and bears a single flower two inches or more long, and comparable with some light-blue *Delphinium*. The lateral sepals and lip are lilac-blue, and the hood-shaped dorsal sepal rather paler, and very prettily lined inside with bright

green forked veins. The species was described by Linnæus filius in 1781 (*Suppl. Pl.* p. 406), and Thunberg afterwards wrote the name as *D. longicornis* (*Prodr. Pl. Cap.* p. 4). The specific name is eminently descriptive of the flower, and the elongated petals are included within the long spur of the dorsal sepal, and extend almost to its base. R. A. R.

CALENDAR OF OPERATIONS FOR JUNE.

By W. J. MORGAN, Rann Lea Gardens, Rainhill, Lancs.

LÆLIA PURPURATA and its varieties will soon be past flowering, and as soon as they commence to grow and root should be examined, and potted or top-dressed, as the state of the plant requires. In potting these, plenty of pot room should be given, so that they will not require doing annually, as the second years' growth generally produces the finest flowers. It is also a strong rooting species, and soon fills a good sized pot with roots. A few plants make a fine display when in flower, and are very useful for cutting, as they throw long spikes as a rule, and last well if the water is kept changed. A mixture of *Osmunda* fibre, leaves and moss, with crushed crocks, suits them well. Pot firmly, and keep the plant on a level with the rim of the pot. I find that if topped up with the same mixture as that used for potting they root better than when topped with all moss, and it gives one a better idea of the condition of the compost underneath than when sphagnum is used. The least moisture in the house seems to keep the sphagnum green, whilst on several occasions on turning a plant out of its pot the material under the moss has been dust dry, yet to go by the condition of the moss the plant did not require water, so that now we top with potting mixture, and get better results, both in plants and flowers. After potting, a nice moist corner should be given them in the stove or East Indian house, until they get hold of the new material, as it saves continually watering the plant, and keeps the bulbs and leaves plump, which is a great thing after repotting. If a plant shrivels it takes the best part of a season to get it right, and then the plant is unable to stand the strain of flowering, and that means growing it for another year before getting flowers, which is very discouraging to employer and grower.

CYMBIDIUMS.—The spring-flowering section will be ready for potting or top-dressing. Plants that have got too large as specimens can be broken up, and all the strongest pieces re-made to grow into specimens again. If smaller plants are required the small pieces can be potted up separately, and soon make nice plants. It is not advisable to put the weaker bulbs into the same pot as the stronger bulbs, as they never make such nice plants as when graded. The compost should consist of quite three parts of good fibrous loam, with some good peat and a little leaves and moss added, and plenty of crocks and crushed charcoal to keep it porous.

Cymbidiums do well in an intermediate temperature, and will grow and flower well in an ordinary plant house, if given a little extra moisture and heat to start them growing again after repotting, so as to prevent them from losing their leaves.

DENDROBIUMS will be in full growth now, and should be given all the sun heat possible without scalding the foliage. The young growths should be carefully staked or tied up before they get too long, as they easily bend over when moving the plants for re-staging or pot-washing, and if the growth gets bent a year's work is wasted. They must be carefully watched for red spider, and if it makes its appearance they should be fumigated without delay, as spider soon makes the young foliage unsightly and checks growth. If the house is kept well damped, and the syringe is freely used in bright weather, it seldom causes much trouble after the use of fire heat is avoided as much as possible. Plenty of ventilation should be given, but the conditions outside must be taken into consideration. No hard and fast rule can be laid down, as some days we get many samples of weather, whereas another day the ventilators can be opened in the morning and left till closing time in the afternoon, so that the only way is to ventilate as much as outside conditions allow without causing a draught. If the houses are studied one can tell as soon as a house is entered whether the ventilation is right or wrong, and the plants will soon show which method is right. Hardly two houses behave alike in this respect, as the position of the house makes a lot of difference in the amount of sun heat which reaches it, and the wind also makes a great difference to houses adjoining but running perhaps different ways.

During a visit to the Ghent Exhibition we visited most of the Orchid nurseries. I think the thing that interested me most was their method of ventilation, or rather building their houses. With one exception none of them used double staging, and the pipes were kept low down, almost on the floor, and the bottom ventilators were large and plentiful, and quashed our horticultural builders' ideas that to ventilate a house properly the air must pass round the hot water pipes. Instead of putting their hot water pipes in "lumps," as our fitters have a special fancy for doing—melon house style—they had them at equal distances over the whole of the floor, which I thought was a good idea, and the plants were certainly as good as most of those one sees on this side of the channel, and when walking through the houses the air was moving without the slightest draught. On looking along the houses they certainly gave me the impression of being more suitable for growing than our "Railway Viaduct" system of houses. Cheapness and utility is their idea of building, but in England a lot of Orchid houses must have cost far more to build than the plants cost that are grown—and often badly grown—in them. Their houses are not built

on the Viaduct system, and they use cocoa-nut matting as a double staging, otherwise the Orchid houses are ordinary plant houses, and the Orchids do well, and the cost of such houses is about one-third the cost of Orchid houses in England. I think there would be a good many more Orchid growers if they knew that Orchids could be grown without having to build costly houses, and houses built specially for Orchids cannot be adapted for other plants without considerable expense, should they be required for another purpose at any time. In building a fancy house here the builder, as a rule, is not a gardener in any sense. He gets the order to build the house, and he builds it to look nice, and when he has finished it and comes to hand it over to the gardener, it is often found impossible to grow anything decent in it. In using cocoanut matting for a double staging they can get their houses much better ventilated, without putting so much air on, than is possible in houses where solid stages are used, as the air and heat from the pipes can pass through the matting, and in the winter, instead of getting all the heat up the back and front of the stage, and the centre of the stage cold and wet, we get an even heat all through the stage, and get no rush of it anywhere.

CATTLEYA GIGAS will be pushing up sheaths, and should be kept up as near the glass as possible till the buds get through the sheath. Plants that are not showing for flower will have a better chance to flower next year if they are well ripened. Do not hurry them, or they will make a second growth, and too weak to flower or to make a strong growth next year.

Cypripediums will now require plenty of moisture. They should never be allowed to get dry at the roots, or thrip will soon make its appearance. With reasonable care in watering and syringing, they will grow fast for the next three or four months, and give abundance of flowers in the autumn. Almost everything that is well rooted will grow well for the next few months, if given plenty of water, both at the roots and overhead on bright days.

Temperatures cannot well be regulated during the summer months. It is no use trying to work to a certain uniform degree, and so long as they do not fall lower than advised in last month's Calendar, very little fire heat will be required to keep them to the proper temperature at night.

SHADING will have to be carefully watched. It is no use letting plants scald in order to keep them hard, as we generally get a fairly good month or so about September and October, which will be quite enough to ripen them off for winter, and they ripen quicker during the autumn without losing the leaves than in the blazing sun we shall get this month and next.

DAMPING should be done three or four times each day, as the houses dry quickly, even with only a little ventilation. In any case water is cheaper than Insecticides, and too much cannot very easily be put on the floor and walls, and the plants certainly enjoy it.

ODONTOGLOSSUM × MACULATISSIMUM.

WE have now pleasure in figuring the new and striking *Odontoglossum* × *maculatisimum*, which was exhibited by M. Ch. Vuylsteke at the recent Ghent Show, a photograph having been kindly sent by the raiser, which is here reproduced. The plant, as recorded at page 153, is a hybrid between *O. maculatum* and *O. × ardentissimum*, the former we believe being the seed parent, and the name was given by M. Vuylsteke to indicate its origin. The hybrid shows most of the characteristics of *O. maculatum*, as will be apparent from the figure, but the influence of the other parent is seen in the



Fig. 22. ODONTOGLOSSUM × MACULATISSIMUM.

elongated raceme, which bore nine blooms, and in various details of structure and colour. The ground colour of the flower may be described as light yellow, and the markings on the sepals and petals are of a peculiar dark bronzy brown, which in the sepals practically obliterates the ground colour. The lip is more white, with a bronzy red-brown blotch in front of the yellow crest. It is another example of the union of the Mexican and Colombian *Odontoglossums*, and M. Vuylsteke must be congratulated on his continued success in hybridising these beautiful plants.

SOCIETIES.

ROYAL HORTICULTURAL.

A MEETING of this Society was held at the Royal Horticultural Hall, Vincent Square, Westminster, on April 28th, when there was a good display of Orchids, and the awards consisted of five medals, one First-class Certificate, four Awards of Merit, one Botanical Certificate, and one Cultural Commendation.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), staged a remarkable group of *Oncidium Marshallianum*, the plants being grown on rafts and of great size, one bearing four enormous panicles of flowers. A Silver Flora Medal was awarded, and a Cultural Commendation to the gardener for such very exceptional culture. *O. M. Davisii* was the darkest of the lot, and the red-brown blotches on the petals were shown up very effectively by the bright yellow lip. A hybrid *Cypripedium callosum* *Sanderæ* × *C. bellatulum album* was also shown, which had a yellowish ground colour, dotted with purplish-rose, the albino characters of the parents being lost.

H. Little, Esq., Baronshalt, East Twickenham (gr. Mr. Howard), received a Silver Flora Medal for a bright and pretty group, some good plants of *Lælio-cattleya Hyeana* being specially noteworthy, and the variety *splendens* having nine fine flowers.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), received a First-class Certificate for the beautiful *Odontoglossum crispum* *Queen of the Earth*, the greater part of the sepals and petals being covered with large blotches of reddish claret colour, of a much darker tint than when recorded and figured two years ago (*O.R.*, xiv. p. 137).

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), received an Award of Merit for *Odontoglossum platytilum superbum*, bearing seven, generally twin-flowered spikes of rose-pink flowers, with darker spots on the lip, a similar award for *Cirrhopetalum Wendlandianum*, nearly allied to *C. Collettii*, but with narrower sepals, and a Botanical Certificate for *C. Roxburghii*, a dwarf species bearing six umbels of small cream-white flowers tinged with rose. The group also included a small West African *Megaclinum*, bearing four spikes of flowers.

Mrs. Bevington, Sevenoaks (gr. Mr. Huxley), received an Award of Merit for a good plant of *Aërides Vandarum*.

F. M. Ogilvie, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), sent *Cypripedium Lawrenceanum* *Marjorie*, near the variety *Hyeana*, but with a tinge of purple on the sides of the dorsal sepal.

Mr. C. Ravens, Odense, Denmark, sent *Cattleya Schroederæ Mathii* and *C. S. Ravensii*.

R. G. Thwaites, Esq., Streatham (gr. Mr. Black), sent two plants of the beautiful white *Cattleya* × *Dusseldorfii* Undine, Chessington var., *Lælio-cattleya* Wellsiana, Chessington var., with white sepals and petals and a rich purple front lobe to the lip; also a hybrid *Odontoglossum*.

Messrs. Armstrong & Brown, Tunbridge Wells, received a Silver Banksian Medal for a bright and effectively-arranged group of good things, and an Award of Merit for the pretty little *Odontoglossum nævium*, having pure white flowers, with undulate, heavily-spotted segments.

Messrs. Cypher & Sons, Cheltenham, received a Silver Banksian Medal for a good group, including a very fine dark form of *Lælio-cattleya* Dominiana.

Messrs. Heath & Sons, Cheltenham, received a Silver Banksian Medal for a good group, consisting largely of *Cypripediums*, with a few other good things.

Messrs. Hugh Low & Co., Enfield, also received a Silver Banksian Medal for a good group of *Cattleyas*, noteworthy among them being *C. Percivaliana* Little Gem, white with orange throat, and *C. Mendelii* Virginius, a large white variety with a light blush front to the lip.

At the Meeting held on May 12th there was again a very good display, and the Awards consisted of one Gold and three other Medals, four First-class Certificates, four Awards of Merit, and three Botanical Certificates.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White) staged a small group of choice things, including a good *Dendrobium crepidatum*, *Brassocattleya nivalis*, the pure white *Cattleya* × *Dusseldorfii* var. Undine, and others. A First-class Certificate was given to *Cattleya Mossiæ* Goossensiana, a very beautiful blush-white variety having a richly-coloured lip margined with white. An Award of Merit was given to *Angræcum* Germinyanum, with four of its graceful pure white flowers, and Botanical Certificates were given to *Epidendrum leucochilum*, with greenish sepals and petals and a white three-lobed lip, to *Eria amica*, an Indian species having whitish flowers lined with pink and a yellow lip, and to the West African *Megaclinium velutinum*, having the rachis and flowers dark purple.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), sent the handsome *Odontoglossum crispum* Britannia, and *O.* × *Ossultoni* Glebelands var. (*Pescatorei* Charlesworthii × *crispo*-Harryanum), the latter, bearing a strongly-branched panicle of many flowers, richly marked with claret-colour on a clear white ground, receiving an Award of Merit.

Baron Sir Henry Schröder, The Dell, Englefield Green (gr. Mr. Ballantine), received a First-class Certificate for the superb *Odontoglossum* × *Wilckeanum* Schröderianum, having light yellow flowers, heavily blotched with red-brown, and the petals and lip well fringed. It received

an Award of Merit in December, 1905, and is now very much improved, as the result of good culture.

Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. Chapman), sent a remarkably fine plant of *Odontoglossum crispum* Leonard Perfect, to which the Society's Gold Medal was unanimously awarded, in recognition of its high degree of merit, and the exceptionally fine culture. The flowers measured $4\frac{1}{4}$ inches across, and were excellent in every respect, the violet-purple blotches being most effective (See fig. 23).

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), received a First-class Certificate for *Brassocattleya heatonensis*,



Fig. 23. *ODONTOGLOSSUM CRISPUM* VAR. *LEONARD PERFECT*.

Westonbirt var. (*B. Digbyana* $\times$ *C.* $\times$ *Hardyana*), with three fine flowers, of a yellowish ground colour tinged with rose, and the disc of the lip greenish yellow.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), staged a pretty group of *Odontoglossums*, including *O. crispum* Mrs. de B. Crawshay and *O. c. Isolde*, two very beautiful white forms, *O. x Nerissa* (*nævium* $\times$ *crispum*), a very pretty hybrid that is described on page 185,

O. × Queen Alexandra var. *fulgens*, a richly coloured variety, O. × *Urania* (*crispum* × *cristatellum*), and O. × *illustre* var. *Theodora* (× *Vuylstekei* × *ardentissimum*), the latter a very pretty bronzy pink flower, margined with white, which received an Award of Merit.

John S. Moss, Esq., Wintershill Hall, Bishop's Waltham (gr. Mr. Kench), received an Award of Merit for *Odontoglossum nebulosum* Mossiæ, a beautiful white variety, with a yellow crest to the lip.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. Day), received a Silver Banksian Medal for a good group, including some brightly-coloured *Masdevallias*, *Cœlogyne pandurata*, *Brassocatleyas*, *Cypripedium* × *Maudia*, *C. callosum* Sanderæ, and other good things.

H. J. Bromilow, Esq., Rann Lea, Rainhill, Lanc. (gr. Mr. Morgan), sent *Cypripedium bellatulum album*, and *C. b. Queen of Spain*, the latter having cream-white flowers, slightly dotted with pale rose. It was imported as the preceding, which it much resembles, except for the trace of colour.

R. J. Farrer, Esq., Clapton, Yorks, sent *Cypripedium* × *Queen of Italy*, and *Odontoglossum crispum* Anne Boleyn, the latter a pretty white form with reddish-purple blotches on the sepals.

The Hon. Mrs. Foley, Fordingbridge, Hants, sent a fine spike of the rare *Lissochilus purpuratus*.

Pantia Ralli, Esq., Ashstead Park, Epsom, sent *Dendrobium* × *Rallianum* (*Hildebrandii* × *splendidissimum grandiflorum*), and its variety *album*.

Miss Willmott, Warley Place, Great Warley, sent a plant of *Maxillaria porphyrostele*.

Messrs. Cypher & Sons, Cheltenham, received a Silver Flora Medal for a brilliant group, containing, at the back, some very good *Lælia purpurata* and *Odontoglossum* varieties, with *Cattleyas* and allies, and brightly-coloured *Masdevallias*, in front.

Messrs. J. Veitch & Sons, Chelsea, also received a Silver Flora Medal for a fine group, including many good forms of *Odontoglossum Pescatorei*, some good *O. crispum*, various *Lælio-cattleyas*, *Brassocatlælia Veitchii*, &c.

M. Mertens, Mont-St.-Amand, Ghent, received a Silver Banksian Medal for a good group of hybrid *Odontoglossums*, *Cattleya Schröderæ alba*, &c.

Mr. A. W. Jensen, Lindfield, Sussex, sent some good forms of *Odontoglossum crispum*, and a good form of *Cattleya Mendelii*.

Messrs. Hugh Low & Co., Enfield, sent some good *Dendrobium thyrsoflorum*, the handsome *D. Bronckartii*, some good *Cattleya Mendelii*, and a few others.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

A MEETING of this Society was held at the Coal Exchange, Manchester, on April 16th, when there was a good display of Orchids, and the awards consisted of five Medals, one First-class Certificate, and nine Awards of Merit.

R. Ashworth, Esq., Ashlands, Newchurch (gr. Mr. Fletcher), received a Silver Medal for a choice group, consisting largely of *Odontoglossums*, and Awards of Merit for *O. crispum* Queen of the Snows, a beautiful white form, *O. × Lambeauianum* vivicans, *O. × L. Britannia*, and *Cypripedium × Britannia* (*× Goweri × ciliolare*).

H. J. Bromilow, Esq., Rainhill, Lanc. (gr. Mr. Morgan), received a Silver Medal for a fine collection of *Cypripediums*, an Award of Merit for *C. × Baron Schröder*, and a First-class Certificate for *C. × majesticum* (parentage unrecorded). *C. × triumphans*, Bank House var., *C. × bingleyense magnificum*, and *C. × Wottoni* were also noteworthy.

J. McCartney, Esq., Hey House, Bolton (gr. Mr. Holmes), received a Silver Medal for a good miscellaneous collection of Orchids, a Bronze Medal for a group of *Cattleyas* and *Lælias*, and an Award of Merit for a good form of *Cattleya Harrisoniana*.

A. Warburton, Esq., Haslingden (gr. Mr. Dalglish), received a Bronze Medal for a good group of *Cypripediums*, another for a good group of *Cattleyas* and *Lælias*, and Awards of Merit for *Cattleya Schroederæ* var. His Majesty and *Cypripedium villosum* var. The Premier.

J. J. Holden, Esq., Southport (gr. Mr. Johnson), received an Award of Merit for *Brassocattleya Dorothy*, a pretty hybrid having *Cattleya Warneri alba* as one of the parents.

H. Arthur, Esq., Blackburn, exhibited well-grown plants of *Cymbidium × eburneo-Lowianum* and the reverse cross.

G. S. Ball, Esq., Burton, Westmoreland (gr. Mr. Herdman), sent a good *Brassocattleya Queen Alexandra*.

J. H. Craven, Esq., Keighley (gr. Mr. Corney), staged a group of the beautiful *Miltonia × Bleuana*, in well-flowered examples.

E. Rogerson, Esq., Didsbury (gr. Mr. Price), sent a plant of the pretty *Dendrobium × Dalhou-nobile*.

Mr. J. Robson, Altrincham, sent *Dendrobium nobile* Hardy's var. and *D. Wardianum ochroleucum*.

Mr. E. G. Mitchell, Sale, staged a small group of *Dendrobiums*.

At the meeting held on April 30th there was again a very fine display and the awards consisted of nine Medals, six Awards of Merit, one First-class Certificate, and one Cultural Certificate.

J. McCartney, Esq., Bolton (gr. Mr. Holmes), received a Silver Medal for a good group of miscellaneous Orchids, a Bronze Medal for a group of

Cattleyas and Lælias, and an Award of Merit for Cattleya Schroederæ var. Alice McCartney.

A. Warburton, Esq., Haslingden (gr. Mr. Dalglish), received a Silver Medal for a good group of Cattleyas and Lælias, a Bronze Medal for a group of Cypripediums, and Awards of Merit for Cattleya Mendelii var. The Monarch, and C. Schroederæ var. The Don.

H. J. Bromilow, Esq., Rainhill, Lanc. (gr. Mr. Morgan), received a Silver Medal for a fine group, and an Award of Merit for Cypripedium × Hopkinsianum var. Bromilowiæ.

Ziba A. Ward, Esq., Northenden (gr. Mr. Weatherby), received a Silver Medal for a good group of Odontoglossums, and an Award of Merit for O. × Phœbe, Ward's var. (cirrhosum × crispum punctatissimum).

S. Gratrix, Esq., Whalley Range (gr. Mr. Shill), received an Award of Merit for Dendrobium × Euterpe magnificum, and a First-class Certificate for Cattleya Mendelii Mrs. Joynson-Hicks, a good white form, with a little colour on the front of the lip.

E. Rogerson, Esq., Didsbury (gr. Mr. Price), received a Cultural Certificate for a fine specimen of Lycaste × Balliæ var. Mary Gratrix.

Messrs. Cypher & Sons, Cheltenham, received a Silver Medal for a fine group of Odontoglossums, Cattleyas, Dendrobiums, &c., in which a grand plant of Miltonia vexillaria with fifteen racemes was particularly noteworthy, and formed quite a picture.

Messrs. Keeling & Sons, Bradford, received a Bronze Medal for a small group of interesting things.

Mr. W. Shackleton, Great Horton, Bradford, also received a Bronze Medal for a small miscellaneous collection.

Mr. J. Birchenall, Alderley Edge, sent the curious Cynoches pentadactylon, and a few other interesting plants.

The meeting held on May 14th being the annual meeting, and the close of the season's working year, a good muster of members were present. The following gentlemen constitute the new Committee and officers:—E. Ashworth (Chairman), S. Gratrix (Treasurer), R. Ashworth, Ball, Thompson, Warburton, Ward, Leemann, Parker, Dr. Hodgkinson, Bromilow, Duckworth, Thorp, P. Smith, Ashton, J. Cypher, Sander, Shill, H. H. Smith, Stevens, Cowan, Upjohn, Keeling, Holmes, P. Weathers (Secretary), and Mr. Pease (Auditor).

The various "Cup" competitions have lent a new stimulus to the Society, the groups and individual plants being much above the average quality, as testified by the many certificates awarded during the season, whilst the finances of the Society are in a satisfactory condition. The following are the winners of the various cups:—The "Sander Cup," for

Cypripediums, was won by H. J. Bromilow, Esq., Rann Lea, Rainhill; A. Warburton, Esq., Vine House, Haslingden, being a good second. The "Thompson Cup," for general groups, was won by A. Warburton, Esq., J. H. McCartney, Esq., Hey House, Bolton, being second. The "Low Cup," for Cattleyas and Lælias, was also won by Mr. Warburton, Mr. McCartney being again second.

Of the plants exhibited on this date brief mention can only be made.

H. J. Bromilow, Esq., Rann Lea (gr. Mr. Morgan), showed *Cypripedium bellatulum* Queen of Spain and C. b. Queen of Portugal, both of which received an Award of Merit, also C. $\times$ Edithæ splendens, and C. concolor var. Emperor.

E. Rogerson, Esq., Oakdene, Didsbury (gr. Mr. Price), showed *Odontoglossum crispum* Britannia.

Messrs. Cypher & Sons, Cheltenham, showed a nice group of mixed plants, including many fine *Odontoglossum crispum*, *Cattleya intermedia* alba, &c.

A. Warburton, Esq., Vine House, Haslingden (gr. Mr. Dalgleish), staged a fine group of plants, including several finely-flowered *Oncidium Marshallianum*, good *Odontoglossum crispum*, as Yellow Queen and Prion, *Cattleya* $\times$ *Parthenia* var. Prince of Wales, &c.

Mr. J. Robson, Altrincham, showed a good *Odontoglossum crispum* with dark markings.

Messrs. Keeling & Sons, Bradford, showed *Bulbophyllum tremulum*, *Renanthera Imschootiana*, *Cypripedium bellatulum*, &c.

J. H. McCartney, Esq., Hey House, Bolton (gr. Mr. Holmes), staged a nice mixed group, in which I noted a good *Cattleya Mendelii*, C. *intermedia* alba, and a nice hybrid *Lælio-cattleya* from L. *præstans* and L.-c. *callistoglossa*, &c.

Mr. W. Bolton, Warrington, showed *Cattleya Mossiæ* var. Cahuzac, C. $\times$ Grand Duchess Elizabeth, *Odontoglossum* $\times$ *Fascinator*, O. *crispum* Roxana, *Lælio-cattleya* Lady Rothschild, &c.

Mr. J. Birchenall, Alderley Edge, showed a *Cattleya Mendelii* of good shape and size.

Mr. Shackleton, Great Horton, Bradford, showed a nice group of *Cypripediums* and *Odontoglossums*.

Dr. Hodgkinson, Wilmslow, received an Award of Merit for *Cypripedium bellatulum* Hodgkinsoni.

G. Shorland Ball, Esq., Burton, Westmoreland, showed *Cypripedium concolor*, G. S. Ball's var. (Award of Merit), and C. *niveum* var. Goliath, very fine.

G. H. Pease, Esq., The Grange, Monton, showed *Odontoglossum Pescatorei* var. Bona, *Cypripedium superbiens*, and C. *bellatulum*. H. THORP.

ODONTOGLOSSUM × CRAWSHAYANUM, THOMPSON'S VAR.,
AND O. HALLII NIGRUM.

ON June 16th, 1904, a beautiful hybrid from the collection of W. Thompson, Esq., Walton Grange, Stone, received an Award of Merit from the Manchester Orchid Society, under the name of *Odontoglossum* ×



Fig. 25. O. HALLII VAR.
NIGRUM.

Fig. 24. O. × CRAWSHAYANUM,
THOMPSON'S VAR.

Crawshayanum, Thompson's var. It had been raised from *O. Harryanum* and *O. Hallii nigrum*. A flower of this handsome hybrid, together with one of the *O. Hallii* parent, has just been sent by Mr. Stevens, and both are here figured from a photograph taken by Mr. F. W. Rolfe. Mr. Crawshay has recently expressed the opinion that *O. Hallii nigrum* is a form of *O. ×*

Lucasianum, "a rare and little known natural hybrid between *O. Hallii* and *O. × cristatellum* (the latter a natural hybrid between *O. cristatum* and *O. Kegeljani*)," which he calls *O. Lucasianum* var. *Thompsoni*. Consequently he re-names and describes Mr. Thompson's fine hybrid as *O. × Carmania* (*Gard. Chron.* 1908, i. p. 275). I regret that, after a careful comparison of all the available material, I cannot follow this view, for I cannot make this *O. Hallii nigrum* to be a hybrid with the parentage suggested. It appears to have all the essential characters of *O. Hallii*, and a quite similar dark form is preserved at Kew, among wild dried specimens of that species. When I collected all the evidence I could find about the natural hybrid *Odontoglossums* from Ecuador, I found no evidence respecting one between *O. Hallii* and *O. × cristatellum*, and the one since described requires confirmation. It would now be a comparatively easy matter to test the question by crossing the two species together, and I hope this will be attempted. Whatever the ultimate solution of the question may be, it is important to have figures of the type plants, for such they are, whether we label them as above, or call them *O. × Carmania* and *O. × Lucasianum* var. *Thompsoni*.

R. A. R.

THE TEMPLE SHOW.

THE twenty-first annual Exhibition of the Royal Horticultural Society in the Inner Temple Gardens, Thames Embankment, familiarly known as the Temple Show, was held on Tuesday, May 26th, and two following days, and was again a great success, both the exhibits and attendance being eminently satisfactory, while the weather was fine throughout. The Orchid exhibits were brilliant in every respect, and it is doubtful whether quite so fine a lot has been staged there before. The novelties included *Odontioda Charlesworthii*, a brilliant crimson hybrid from Messrs. Charlesworth, *O. St.-Fuscien*, another handsome thing from M. H. Graire, the remarkable *Bulbophyllum mirum* from Sir Jeremiah Colman, with a few fine hybrid *Odontoglossums* and other things. The Veitchian Cup, which cannot be won a second time by any exhibitor, was gained on this occasion by F. M. Ogilvie, Esq., and the other awards consisted of five Gold Medals (which, however, included other subjects beside Orchids), six other Medals, two Silver Cups, six First-class Certificates, seven Awards of Merit, one Botanical Certificate, and one Cultural Commendation. The judges for Orchids were Messrs. H. J. Chapman, J. Gurney Fowler, H. Little, and F. Wellesley.

F. Menteth Ogilvie, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), staged a magnificent group, remarkable alike for excellent culture and effective arrangement, and was deservedly awarded the Veitchian Cup, together with a Silver Lindley Medal, in recognition of its excellence at all points. In the centre of the group was a varied series of finely-grown

Miltonia vexillaria, including the richly-coloured Empress Augusta Victoria, *chelseiensis* with six spikes, *Cobbiana*, the white-lipped *virginalis*, &c., and on either side of these, clusters of the white and green *Cypripedium Lawrenceanum* *Hyeaeanum*, *C. × Maudiae*, and *C. callosum* *Sanderæ*, the latter including as many as fifty flowers. The coloured forms of *C. Lawrenceanum* were also very fine, and a cluster of *C. niveum* near the front was very effective. The *Odontoglossums* were numerous and good, and included *O. × ardentissimum* *Shrubbery* var., a very heavily blotched form, some excellent *O. crispum*, white and coloured, a very fine *O. × Andersonianum*, the beautiful yellow *O. luteopurpureum* *Vuylstekeanum*, a hybrid from *O. cirrhosum* × *ardentissimum*, bearing a large panicle of richly-coloured flowers, &c. Other fine things were a lot of showy *Cattleyas*, including a noble specimen of *C. Skinneri*, *C. S. alba*, *C. citrina*, two well-flowered *Cymbidium Devonianum*, *C. Lowianum* *concolor*, some brilliant *Cochlioda Noetzliana*, fine examples of *Oncidium Marshallianum*, *Cypripedium × Honnoriæ* (*Druryi* × *Godefroyæ*), and numerous other showy things.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), exhibited a magnificent group of finely-grown plants, and arranged in the most effective manner, to which the Society's Gold Medal was awarded. A special feature of the group was the remarkable series of *Miltonia vexillaria*, including the beautiful variety *virginale*, with ten spikes and 41 flowers, two fine Empress Augusta Victoria, with 61 and 47 flowers, the richly-blotched Westonbirt var. with two spikes and ten flowers, *Cobbiana* with six spikes and 29 fine flowers, *marmorata* with three spikes and seventeen flowers, Alfred with five spikes and 27 flowers, Mrs. H. Ballantine, a beautiful white form, Constance Wigan, with blush-pink sepals and petals and a white lip, and *superba*, the latter a noble specimen bearing 28 spikes and 138 flowers, to which a Cultural Commendation was given. The *Odontoglossums* were also excellent, one magnificent plant of *O. crispum* bearing nine spikes and 124 flowers, and another four spikes and 73 blooms. The exquisitely shaped *O. c. Madonna* bore three spikes and 48 blooms, and the group contained over 100 spikes of this species with about 1,300 blooms. The *Cattleyas* were very fine, and included a dozen plants of the beautiful *C. × Dusseldorfii* var. *Undine* with over fifty of its chaste white flowers, two well bloomed plants of *C. Mossiæ Reineckiana*, *C. M. Wageneri*, *C. M. Westonbirt* var., with 22 flowers, *C. Skinneri alba*, *C. Warneri*, some good *C. Mendelii*, *C. Schilleriana*, &c. *Brassocattleya* was represented by half-a-dozen fine things, the handsome B.-c. *Digbyano-Mossiæ*, Westonbirt var., bearing eight blooms, while *Lælio-cattleyas* were numerous, including L.-c. *Canhamiana* *Rex* with twelve blooms, L.-c. *Lustre magnifica*, L.-c. *Fascinator* with thirteen

flowers, L.-c. Bedouin (*L. purpurata* × L.-c. Hyeana), and some good L.-c. Aphrodite, G. S. Ball, &c. Other good things were *Dendrobium pulchellum luteolum*, *Vanda teres*, *Phalænopsis amabilis Rimestadiana*, some good *Lælia purpurata* varieties, *L. grandiflora alba*, and some good *Cochlioda Nøetzlina*, *Masdevallias*, *Cypripediums*, and others too numerous to mention. A First-class Certificate was given to *Lælio-cattleya Elva*, Westonbirt var. (*C. Warscewiczii* × L.-c. *Ingramii*), a fine thing, having deep rose-coloured sepals and petals, and a deep ruby crimson lip, with a pair of yellow blotches in the throat.

Sir Jeremiah Colman, Bart., Gatton Park, Reigate (gr. Mr. Bound), staged a remarkably rich and varied group, in which about 180 species, varieties, and hybrids were represented, and to which a Silver Cup was awarded. It contained a fine series of *Cattleyas* and *Lælio-cattleyas*, including many raised in the collection, as several brilliant forms of *C.* × *William Murray*, *Lælio-cattleya Nysa*, *Canhamiana*, *highburiensis* and *G. S. Ball*, with many excellent forms of *Cattleya Mossiæ*, and others. The *Odontoglossums* were a fine lot, including many good *O. crispum*, *O. Wilckeanum Gatton Park* var., *O.* × *warnhamense*, *triumphans*, *aureum*, *polyxanthum*, *tripudians*, × *excellens*, *citrosum*, × *Adrianæ*, *cirrhosum*, &c., some fine *Miltonia vexillaria*, *M. Warscewiczii*, *Epidendrum* × *Boundii* and others, *Spathoglottis* × *Colmanii*, *S.* × *fulvissima* (*aurea* × *aureo-Vieillardii*), the rare *S. Soutteriana*, *Cochlioda Nøetzlina*, *Cymbidium Lowianum concolor*, *C.* × *Lady Colman*, and many others, *Sophrolælia Psyche*, *Phaius* × *Norman*, three very good plants of *Cœlogyne* × *Colmanii* *C. Parishii*, *C. pandurata*, *Renanthera Imschootiana*, some good *Lælia purpurata*, *Vanda teres*, some interesting hybrids of *Diacrium bicornutum*, some good *Cypripediums*, many brilliant *Masdevallias*, with quite a series of botanical species, including the tiny *M. O'Brieniana*, the beetle-like *M. tridactylites*, *M. Houtteana*, and others, *Liparis cornicaulis*, *Octomeria diaphana*, *Scaphosepalum pulvinare* and *antenniferum*, *Cirrhopetalum Cumingii*, and several others, *Bulbophyllum barbigerum*, *B. Lobbii*, and var. *Colossus*, with many other interesting things. Awards of Merit were given to the bright yellow *Odontoglossum Lindeni*, and to the rare and striking *Cirrhopetalum pulchrum*, and a Botanical Certificate to the remarkable *Bulbophyllum mirum*, which is noted on another page.

R. Ashworth, Esq., Ashlands, Newchurch, Manchester (gr. Mr. Fletcher), received a Silver-gilt Flora Medal for a small group, consisting chiefly of good *Odontoglossums*, in which we noted the very fine white *O. Pescatorei Ashworthii*, the regularly spotted *O. P. Charlesworthii*, *O. crispum* *Starlight*, the beautiful *O. c. heliotropium*, *O. c. Black Prince*, with very dark blotches, the pretty *O. c. Marjorie*, a flower of the *Lady Jane* type, a good *Miltonia vexillaria*, and other interesting things.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), received a First-class Certificate for *Cattleya Mendelii* His Majesty, a very fine form, with blush white sepals and petals, and a pure white lip with a small purplish blotch in front of the yellow disc.

Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. Chapman), received an Award of Merit for *Odontoglossum crispum* Kenneth, a very fine white form, heavily blotched with reddish-purple.

M. H. Graire, St. Fuscien, Amiens, France, received an Award of Merit for *Odontioda St.-Fuscien* (*Cochlioda Noëtzliana* × *Odontoglossum* × *Adrianæ*), a charming form, having a light yellow ground colour, blotched with scarlet on the sepals and spotted on the petals, and both margined with scarlet, while the three-lobed lip was tinged with rose in front, and bore three scarlet blotches in front of the yellow crest.

Mrs. Collingwood, Lilburn Tower, Alnwick (gr. Mr. Lovett), showed a small group of finely-flowered *Vanda teres*.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. Day), sent *Odontoglossum crispum* Goodsonæ and *O. c.* Président Fallières, two very handsomely blotched forms.

M. Jules Hye de Crom, Ghent (gr. Mr. Coen), showed the pretty *Miltonia* × *Hyeana* (*M.* × *Bleuana* × *M. vexillaria* memoria G. D. Owen), a pretty white flower with rosy-purple radiating lines on the disc.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), showed *Odontoglossum crispum* xanthotes Snow Queen, a beautiful white form with some yellowish spots on the lip.

J. Rutherford, Esq., Beardwood, Blackburn (gr. Mr. Lupton), sent *Odontoglossum* × *amabile* Beardwood var., a pretty light-coloured form.

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. Ballantine), sent a small group of choice things, including the handsome *Miltonia vexillaria* memoria G. D. Owen, *Odontoglossum* × *Queen Emma*, a richly blotched form, with the fine *O. crispum* varieties *Veitchianum*, *F. K. Sander*, *Doris*, and *Haroldianum*.

The trade exhibits were remarkably fine, and considerations of space prevent us from giving more than the salient features of the different groups.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a magnificent group, to which the Society's Gold Medal was awarded. It was particularly rich in *Odontoglossums*, including many white and blotched *O. crispum* and other species, with a rich series of hybrids, prominent among them being some fine *O.* × *Rolfeæ*, and good forms of *O.* × *Phœbe*, *O.* × *Othello* Golden Gem, of a peculiar light-orange shade, *O.* × *Gladys* var. *May Blossom* (*cirrhosum* × *Rolfeæ*), having broad, acuminate, handsomely blotched segments, *O.* × *Eurydice*, *O.* × *amabile pallidum*, a delicate

primrose-tinted flower with pale blotches, *O.* × *Eleanor* (*cirrhosum* × *Uroskinneri*), and others too numerous to mention. *Lælio-cattleyas* were numerous and good, and included *L.-c. Fantasia* (*L.-c. Martinetii* × *C. Mendelii*), a fine rosy form with richly-coloured lip, handsome forms of *L.-c. Dominiana*, *L.-c. Henry Greenwood*, and many others. *Cattleyas* included a noble specimen of *C. Skinneri*, three good *C. Mossiæ Wageneri*, with numerous coloured forms, a specimen of *C. citrinia* with twelve flowers, and many other good things. At the back were fine examples of *Oncidium macranthum*, *Marshallianum*, &c., with some excellent *Vanda tricolor* and *suavis*. We noted also many good *Lælia purpurata* and *Miltonia vexillaria*, *M. v. alba*, a beautiful white variety, *Pescatorea elata*, the rare *Bletia Shepherdii*, a *Catasetum* with three female flowers, some good *Phalænopsis amabilis Rimestadiana*, a good plant of *Masdevallia* × *Courtauldiana*, a very fine *Lælia grandiflora*, *Dendrobium sanguinolentum*, the large and beautiful *Trichopilia Backhouseana*, *Brassocattleya Hippodamia* (*B. nodosa* × *C. Aclandiæ*), with greenish sepals and petals, and the broad lip pink in front, and numerous other fine things. A First-class Certificate was given to *Odontioda* × *Charlesworthii* (*C. Noëtzliana* × *O. Harryanum*), having the flowers most like the *Cochlioda* in shape, but almost uniformly ruby-crimson in colour, except for the spiny yellow crest. It was the most brilliant novelty in the Show. An Award of Merit was given to *Odontoglossum* × *hibernicum* (*Hallii* × *hastilabium*), most like the latter in shape, and having the sepals and petals heavily barred with brown and tipped with yellow, and the lip similarly barred, but white in front.

Messrs. Sander & Sons, St. Albans, also staged a remarkably rich and varied group, containing a very brilliant series of *Odontoglossums*, *Cattleyas*, *Lælio-cattleyas*, *Phalænopsis amabilis Rimestadiana*, *Miltonia vexillaria*, *Cochlioda Noëtzliana*, *Renanthera Imschootiana*, *Cypripediums*, &c. The *Odontoglossums* included many fine forms of *O. crispum*, × *Lambeauianum*, × *eximium*, × *ardentissimum*, *platychilum*, the rare *O. stellatum*, two forms of a pretty hybrid between *O.* × *Harryano-crispum* and *O.* × *Adrianæ*, &c. We noted also a very fine *Cymbidium Sanderæ*, *Maxillaria Sanderiana*, some good *Cattleya Mendelii*, *Mossiæ*, both white and coloured, *Schroederæ*, *Skinneri*, the fine *C. citrina maxima*, *Trichopilia suavis* and *coccinea*, the handsome *Odontonia Lairesseæ* with three racemes, *Aërides Houlietianum*, and the white *A. virens Sanderæ*, *Oncidium ampliatus*, *O. Gardneri*, and others, *Dendrobium Bronckartii*, *thyrsiflorum* and *densiflorum*, *Warscewiczella discolor*, *Masdevallia O'Brieniana* and *xipheres*, *Polystachya bracteosa*, *Sarcochilus inflatus*, *Lælia grandis*, &c. (Gold Medal for Orchids and foliage plants):

Messrs. Hugh Low & Co., Enfield, staged a very fine group, including

a very brilliant series of *Cattleya Mendelii*, some good *C. Mossiæ*, many fine *Lælio-cattleyas*, a brilliant series of *Odontoglossums*, and the usual showy things of the season, among which we noted some excellent *Cattleya Skinneri*, *C. intermedia alba*, *Diacrium bicornutum*, *Dendrobium Bronckartii*, *D. chrysotoxum*, the rare Javan *D. elongatum*, *D. albosanguineum*, *D. Bensonæ album*, a fine *Epidendrum prismatocarpum*, the rare *E. campylostalix*, *Oncidiums cornigerum*, *unicorne*, *Cavendishianum*, and others, the handsome *Cirrhopetalum Wendlandianum*, *Cypripedium Druryi*, *C. concolor*, a lot of *C. niveum*, &c., *Aërides Fieldingii*, *Dendrochilum Cobbianum*, *Odontoglossum Pescatorei virginale*, the finely-blotted *O. c. Kenneth*, and other forms of the species, with several good hybrids, and various other fine things. An Award of Merit was given to *Cattleya Mossiæ* var. *Le Président*, a large and very richly coloured form. (Gold Medal for Orchids, Carnations, &c.).

Messrs. James Veitch & Sons, Chelsea, included a number of showy Orchids in their fine group of foliage plants, &c., to which a Gold Medal was awarded. They consisted chiefly of good forms of *Lælia purpurata* and *cinnabarina*, *Odontoglossum crispum* and *Pescatorei*, *Oncidium Marshallianum*, *phymatochilum*, and *varicosum Rogersii*, *Cattleya Mendelii*, and a few good *Lælio-cattleyas*.

Messrs. James Cypher & Sons, Cheltenham, staged a brilliant group of Orchids which gained a Silver Cup. It contained a fine series of showy *Cattleyas*, *Lælia purpurata*, *Miltonia vexillaria*, *Odontoglossums*, many good *Cypripediums*, brightly-coloured *Masdevallias*, and a number of rarer things. We noted some good *Epiphronitis Veitchii*, *Brassia verrucosa*, *Dendrobium atrovioleaceum*, *Brassocattleya intermedio-Digbyana*, *Cypripedium Rothschildianum* × *Maudiae*, *bellatulum*, *Lycaste Skinneri*, *Bulbophyllum barbigerum*, *Promenæa xanthina*, *Zygopetalum crinitum*, *Oncidium phymatochilum*, *Kramerianum*, *Papilio*, and others, *Ada aurantiaca*, *Bletia Shepherdii*, *Lælio-cattleya Canhamiana*, *Ganymede*, &c., *Polystachya Ottoniana*, *Miltonia vexillaria leucoglossa*, *Masdevallia Wageneriana*, a fine *Odontoglossum crispum xanthotes*, × *Rolfeæ*, × *formosum*, and numerous other fine things.

Messrs. Armstrong & Brown, Tunbridge Wells, staged a particularly fine group, the effect of which was enhanced by an exceptionally artistic arrangement, the flat surface being broken up by two deep dells, which were filled with *Cypripediums*, and contrasted well with the brightly-coloured things behind and at the convex sides. A Silver-gilt Medal was awarded to the group, in which we noted many fine *Odontoglossums*, *Oncidium*, *Marshallianum*, *macranthum*, brilliant *Masdevallias*, *Cymbidium Lowianum*, and, among the tall things at the back, a fine plant of *Cœlogyne Dayana*, bearing about ten of its graceful racemes. There were

also *Odontoglossum crispum virginale*, with many other white and spotted forms, the handsomely-blotched *O. × ardentissimum* Mrs. Temple, the fine *O. × Wilckeanum* Urania, *O. × percultum*, *ramosissimum*, and *hastilabium*, *Anguloa Clowesii*, a flesh-coloured *A. eburnea*, *Lælia grandiflora*, *Oncidium cucullatum*, *Sophronitis grandiflora*, *Cattleya Skinneri*, *Mossiæ*, and others, *Dendrobium barbatulum*, *Cypripedium glaucophyllum*, the very dark *C. Chamberlainianum magnificum*, *C. Mastersianum*, *C. callosum* Sanderæ, many good *C. bellatulum*, &c.

Messrs. J. & A. A. McBean, Cooksbridge, received a Silver Flora Medal for a very beautiful group, consisting largely of splendidly-grown *Odontoglossum crispum*, with some well-flowered *Cymbidium Lowianum*, *Miltonia vexillaria*, and in the centre many plants of the brilliant *Cochlioda Noëtzliana*. We noted *Odontoglossum crispum* Pride of Sussex, a very fine form, densely blotched with red-purple, with the varieties *virginale*, *Roslyn Sunrise*, F. K. Sander, and another very richly-blotched form, *Anguloa Clowesii*, *Peristeria elata*, *Dendrobium Victoria-Regina*, *D. Dearei*, *Cœlogyne pandurata*, some good *Cypripedium bellatum*, &c.

Messrs. Moore, Ltd., Rawdon, Leeds, also received a Silver Flora Medal for an excellent group, containing many fine *Odontoglossum crispum* and others, *Miltonia vexillaria*, *Oncidium Marshallianum*, *Cymbidium Lowianum*, with many other interesting things, among which we noted some good *Odontoglossum × Phœbe*, *× Lambeauianum*, *× Ossultoni*, *Angræcum Sanderianum*, the rare *A. falcatum*, the richly-coloured *Saccolabium ampullaceum*, *Vanda cœrulescens* and *Bensoni*, *Renanthera Imschootiana*, *Masdevallia × Bocking Hybrid*, *Trichopilia tortilis*, a green *Catasetum trifidum*, *Epidendrum variegatum*, *Physosiphon Loddigesii*, *Cœlogyne pandurata*, *Dendrobium Victoria-Regina*, some good *Cypripedium bellatulum*, &c.

Messrs. Wm. Bull & Sons, Chelsea, contributed a showy group of Orchids, containing many good *Lælia purpurata*, *Cattleya Mendelii*, *Skinneri*, *Mossiæ*, *Dendrobium thyrsoflorum*, *Odontoglossum Pescatorei*, *crispum*, and *× excellens*, *Epidendrum radicans*, &c. (Silver Medal for Orchids and Foliage plants).

M. Ch. Vuylsteke, Loochristi, Ghent, sent a few choice *Odontoglossums*, one called *O. crispum* Blushing Pride being a beautiful light-coloured form, with a zone of light rosy pink on the lower half of the segments and some white at the base. First-class Certificates were given to *O. × eximium* Queen Alexandra, a very heavily blotched form, and to *O. × illustre* luxurians, a large reddish-purple variety with white tips, and an Award of Merit to *O. × laudatum*, a richly-blotched form with a broad, well-shaped lip.

Messrs. W. Cutbush & Sons, Highgate, received a First-class Certificate for a fine group of the rich purple *Cypripedium macranthum* in a group

outside, the award being made under the name *C. ventricosum*. The group also contained a beautiful pure white form of the species, which we do not remember to have seen before.

Mr. J. Birchenall, Alderley Edge, Cheshire, sent a plant of the rare *Schlimia trifida*, Rchb. f., a pale greenish form of *Bollea Lalindei*, and a pretty blush-white form of *Cattleya Mendelii*.

Mr. J. Robson, Altrincham, sent a pretty little group, containing a few good *Phalænopsis amabilis Rimestadiana*, good plants of *Masdevallia ignea* and *Dendrobium nobile*, *Bifrenaria Harrisonæ*, and several good *Odontoglossums*.

THE HYBRIDIST.

ODONTIODA CHARLESWORTHII.—A very brilliant hybrid derived from *Odontoglossum Harryanum* × *Cochlioda Noetzliana*, for which Messrs. Charlesworth & Co. received a First-class Certificate at the recent Temple Show. It is most like the latter in general character, but the flower is enlarged, and modified in shape, while the colour is of nearly uniform ruby crimson, with a bright yellow, spiny crest, the usual *O. Harryanum* ground colour and markings being obliterated. The characters of this parent are more apparent in the vegetative organs. It is a brilliant acquisition.

ODONTIODA ST.-FUSCIEN.—Another striking *Odontioda*, raised from *C. Noetzliana* × *O. X Adrianæ*, for which M. H. Graire, St. Fuscien, Amiens, received an Award of Merit at the Temple Show. It is fairly intermediate in shape and size, and the ground colour is yellow, with numerous scarlet dots on the petals, and a margin of similar colour, but with very little yellow remaining on the sepals. The lip is yellow in the centre, with three blotches in front of the crest, and a rosy apex. A flower having the same parentage is sent from the collection of R. G. Thwaites, Esq., of Streatham, but in this case the colour is scarlet, without any obvious yellow in the ground colour. It is from a tiny seedling, blooming for the first time.

ODONTOGLOSSUM X NERISSA.—A charming little hybrid, raised in the collection of De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), from *O. nævium* ♀ and *O. crispum* ♂, and most like a much enlarged and embellished edition of the former. It has retained the undulate segments and white ground colour, while the deep red-purple blotches are very regularly distributed over the flower. The lip is very acuminate, and the crest is yellow, with a trace of side teeth, while the column wings are broad and toothed. The influence of *O. crispum* is chiefly traceable in the larger size and broader segments of the flower.

ODONTOGLOSSUM X ANDINELLA.—Another of Mr. Crawshay's hybrids, raised from *O. X Andersonianum* ♀ and *O. Hunnewellianum* ♂. It is most like *O. X Adrianæ*, and had it appeared as a wild plant would perhaps

have been taken for a form of it, though the lip is more acuminate. The ground colour is light yellow, with large irregular dark brown blotches on the sepals, smaller ones on the petals, and the lip has a large red-brown blotch in front of the crest, with a few smaller spots. The column wings are broad and toothed, and thus most like *O. Hunnewellianum*. It will be interesting to watch this hybrid, as it might appear as a wild plant.

ODONTOGLOSSUM $\times$ HIBERNICUM.—A striking hybrid, raised by Messrs. Charlesworth & Co. from *O. Hallii* ♀ and *O. hastilabium* ♂, and which received an Award of Merit at the Temple Show. It is most like the latter in shape, and has the sepals and petals heavily barred with dark brown, leaving little of the ground colour beyond the yellow tips. The lip is pandurate, brown at the base, and white in front. It should develop into a fine thing.

CYPRIPEDIUM THUNBERGII.

THERE is a handsome hardy *Cypripedium* in cultivation under the name of *C. macranthum* which has puzzled me greatly, as the flowers are invariably veined and mottled with light rose and white, not deep rose-purple as in the well-known Siberian species. Plants now flowering at Kew were obtained from the Yokohama Nursery Co., Japan, as *C. macranthum*, and a fine lot exhibited by Messrs. Cutbush & Sons at the Temple Show were, I understand, from the same locality. Curiously enough, the true Siberian plant, which was also exhibited in quantity, received a First-class Certificate from the Orchid Committee as *C. ventricosum*. On looking up the subject I find a coloured figure in the old work, *Honzo Zufu* (xxxix. t. 18), under the name "Ats' mori so," which has flowers of a similar shape with a white ground, striped on the sepals and petals and spotted on the lip with light rose, and this I think must represent the plant now under discussion. These facts seem to fix the habitat as Japan. Franchet and Savatier enumerate *C. macranthum* as a native of Japan, but they include *C. ventricosum*, Sw., *C. Thunbergii*, Blume, and *C. Calceolus*, Thunb., as synonyms, while excluding the one now under discussion, leaving it as a doubtful plant, because of the differences pointed out. There is evidently some confusion here, for Pfitzer regards *C. Thunbergii*, Blume—based on *C. Calceolus*, Thunb.—as distinct, and says that Blume's type exists in the Leyden Herbarium. *C. ventricosum*, Sw., we know to be distinct, and it now appears that the Japanese *C. macranthum* is not identical with the Siberian plant of that name. The only species of this affinity given by Matsumura in his *Nomenclature of Japanese plants* is (p. 63) *C. macranthum* var. *ventricosum*, but in his later (1906) *Index Plantarum Japonicarum* (p. 242), it stands as *C. Thunbergii*, Blume, with the synonyms above mentioned, and several localities, while he is only able to include *C.*

macranthum on the authority of old authors, and without any locality, which suggests that the record really belongs to the preceding.

C. Thunbergii, Blume (*Coll. Orch.* p. 169, t. 60, fig. 2), was based on *C. Calceolus*, Thunb., and is shown with a narrower, more acute staminode than *C. macranthum*, a character apparent in the living plants at Kew, but there is a discrepancy in the drawing of the side-lobes of the lip. In the living plants, however, the lateral openings of the lip are larger than in *C. macranthum*. There are dried specimens at Kew from three Japanese localities, which evidently agree, for the lines of colour can still be traced, and the same remark applies to a figure in the Japanese work *Somoku Zusetsu* (xviii. t. 87). It is evident that we must now call the Japanese plant *C. Thunbergii*. We have evidently not yet cleared up the history of these eastern *Cypripediums*.

R.A.R.

LÆLIO-CATTLEYA × OLIVERI.

A HYBRID from the collection of E. F. Clark, Esq., Teignmouth, now blooming for the first time, with a spike of three flowers. In June, 1901, Mr. Clark flowered a seedling purchased from Messrs. Charlesworth & Co., with the record "*Cattleya citrina* × *Lælia cinnabarina*," but in which no trace of the *citrina* influence could be found (*O.R.* ix. p. 223). Having a plant of *Lælio-cattleya Schilleriana* in bloom at the time he pollinated it from the seedling just mentioned, and in due time obtained a capsule, and subsequently a few seedlings, one of which, it is believed, has produced the flower now sent. In the previous year, however, Mr. Clark had made the cross *Cattleya Percivaliana* × *Lælio-cattleya intermedio-flava*, and there is just a slight possibility that the flower sent may be from this cross, though Mr. Clark believes it came from the other. The scape is elongated, and the flowers about as large as *L.-c. intermedio-flava*, and very similar in colour. The sepals and petals may be described as straw-coloured, and there is a slight tinge of pale yellow at the apex of the side lobes and margins of the isthmus of the lip. The front lobe is broad, crisped, and purple, with a light yellow apex. The column is light purple. There is no trace of the colour of *Lælia cinnabarina*, and had we been told it was a form of *L.-c. intermedio-flava* we should have agreed. Mr. Clark has dedicated it to his friend, Mr. W. D. Oliver, author of a work on the Island of Reunion. Mr. Clark sends a flower of the *L.c. Schilleriana* which was the actual seed parent, in which the features of *L. purpurata* and *C. intermedia* are clearly combined, and an old pseudobulb and leaf of the supposed *L. cinnabarina* parent, which chiefly differs in having lost the usual purple suffusion. This latter was re-crossed with *C. citrina*, and a seedling was obtained, which had the usual purple tinge of *L. cinnabarina*, but it only lived for a year. We would suggest that the cross between *C. citrina* and

L. cinnabarina should again be attempted, "both ways," for it is impossible to say what strange happenings are included in the above records. *C. citrina* has been successfully crossed with both *C. intermedia* and *L.-c. elegans*, and we do not see why it should not also cross with *L. cinnabarina*. It may be added, in conclusion, that *C. intermedia* is involved in the ancestry of *L.-c. Oliveri*, whichever of the two suggested parentages is correct.

ORCHIDS IN SEASON.

A FLOWER of the very richly-coloured *Odontoglossum* × *eximium* var. *Centenary*, has been sent from the collection of W. Thompson, Esq., Walton Grange, Stone, by Mr. Stevens. It has very broad rounded segments, and the rich claret-purple blotches almost obliterate the ground colour of the segments, leaving a small white area at the base, and a broad white margin. The lip is white, with a large blotch in front of the yellow crest, and a few smaller blotches at the sides.

Some handsome *Odontoglossums* are sent from the collection of H. S. Goodson, Esq., Fairlawn, Putney, by Mr. Day. *O.* × *armainvillierense* var. *Rajah* is a fine claret-purple form, margined with white, and the colour somewhat broken up by irregular white lines in places, while the lip is more broken up into blotches round the yellow crest. *O. crispum* var. *H. S. Goodson* is of good shape, the sepals mostly suffused with light purple, the broad petals having a similar blotch on the lower half, the upper part being white, and the lip is also irregularly blotched round the crest. The colour is unusual. One called *O. c. Fairlawn* is a smallish round flower, with roundish regular blotches on the sepals and petals, and we suspect it be a form of *O.* × *Fascinator*. *O. c. Princess* has broad white acuminate sepals and petals, well blotched with violet-purple.

A curious form of *Odontoglossum crispum* of the *Lady Jane* type is sent by M. Fl. Claes, of Brussels. It has the usual small, coloured lip, and the petals have a small group of linear blotches about the centre, and some dull red-purple markings above the middle. There is also a bright yellow flower showing traces of similar markings on the petals, and M. Claes suggests that it may be a natural hybrid between the preceding and *O.* × *Adrianæ*. Whatever its origin, it shows the same character, and it will be interesting to see what it develops into. There is some structural peculiarity about the flowers of this type, but it is difficult to suggest the cause of it.

Several beautiful Orchids are sent from the collection of G. Hamilton-Smith, Esq., of Finchley, by Mr. Coningsby. *Lælio-cattleya* Mrs. G. Hamilton-Smith is a very handsome hybrid from *Lælia tenebrosa* × *L.-c. C. G. Roebling*, and is now flowering for the first time. It combines the influences of *Cattleya Gaskelliana*, *Lælia purpurata* and *L. tenebrosa*, and

has largely inherited the good shape of the former, with an increased brilliance of colour evidently due to the latter. The first inflorescence carries two flowers. A branching panicle of an *Odontoglossum* bearing 28 flowers is, we believe, a form of *O.* $\times$ *amœnum* (*Pescatorei* $\times$ *sceptrum*). It was purchased at the sale of the late Sir Frederick Wigan's collection, and was labelled *O.* $\times$ *ardentissimum concinnum*, but it is not M. Vuylsteke's plant of that name. It is fairly intermediate between the species named, and has a yellow ground colour with brown markings. A seedling from *O.* $\times$ *Adrianæ* $\times$ *triumphans*, now producing its first two flowers, is a form of *O.* $\times$ *Ernestii*. Lastly may be mentioned a spike of *Cymbidium lancifolium*, from a plant recently introduced from Java.

Four beautiful forms of *Lycaste Skinneri* are sent from the collection of G. S. Jessop, Esq., Rawdon, Leeds, by Mr. Wilkinson, which show well the range of variability of the species. A spike of the pretty Australian *Dendrobium Kingianum* is also sent.

EPIDENDRUM PENTOTIS.

THIS distinct and handsome *Epidendrum* has just flowered at Kew, and at the Royal Botanic Garden, Glasnevin, which enables its history to be carried farther. It was originally described in 1877 (*Rchb. f. in Linnæa*, xli. p. 81), as a plant that was imported from the province of Minas Geraes, Brazil, and which had flowered with Messrs. Linden, at Brussels. A painting of a single flower was made by Mr. Day in June, 1875 (*Day Orch. Draw.* xviii. t. 75), the name being given without any further clue to its history, so that it may have been distributed before the name was published. Recently it was figured by M. Goossens (*Dict. Ic. Orch.*, *Epidendr.* t. 18), from the collection of M. Fournier, of Marseilles. Now that material is available for comparison, I find that it has an earlier history, for it is the *E. fragrans* var. *megalanthum*, Lindl. (*Journ. Hort. Soc.* iv. p. 223), which is said to have been presented to the Society by G. Ure Skinner, Esq., in July 1848, and was said to be from Guatamala. It flowered in the following year. Its distinctness from *E. fragrans*, Sw., I have already pointed out, but unfortunately I called it *E. confusum* (*O. R.* vii. p. 197), which now becomes a synonym. The discrepancy in habitat is a point which remains to be cleared up, as on this point no further information is available. It is a much more robust plant than *E. fragrans*, having larger, diphyllous pseudobulbs, much longer leaves, and larger flowers, the sepals being about two inches long. The colour is cream yellow, with numerous purple radiating lines on the lip, which is cochleate, and superior, as in other species of the group. It would be interesting to clear up the question of habitat.

R. A. R.

BULBOPHYLLUM MIRUM.

THIS remarkable Sumatran *Bulbophyllum* has appeared in cultivation, having been exhibited in the collection of Sir Jeremiah Colman, Bart., at the recent Temple Show, when it received a Botanical Certificate from the Orchid Committee. It was figured and described in 1906, by J. J. Smith (*Ic. Bogor. ii. t. 216*), the habitat given being Padang Pandjang, Sumatra. It is described as having the habit of *B. biflorum*, Teijsm. & Binn., though its real affinity is doubtful, and in the remarkable appendages of the petals it can only be compared with *Epicrianthes javanica*, Blume, a plant now referred to *Bulbophyllum*, but which differs totally from the present one in habit. The plant is about three inches high, and has ribbed pseudobulbs, oblong leaves, and short, two-flowered scapes of light coloured flowers, which are closely dotted with light reddish brown. The lateral sepals are united, incurved at the margin, and about twice as long as the ovate connivent dorsal one. The petals form the really remarkable feature of the species, as they consist of a small rounded disc, on the back of which is situated a tuft of about fifteen to seventeen mobile linear filaments, which protrude from the angle formed by the sepals, and wave about with the slightest breeze. The character has evidently some connection with the insects which fertilise the flowers, but the details can, of course, only be guessed. Observation of the plant in its native habitat would throw an interesting light on the subject. R. A. ROLFE.

NOTES.

Two meetings of the R.H.S. will be held at the Royal Horticultural Hall, Vincent Square, Westminster, during June, on the 9th and 23rd, when the Orchid Committee will meet at the usual hour, 12 o'clock, noon. The afternoon lecture on the second date will be given by the Rev. Prof. G. Henslow, V.M.H., the subject being "The absorption of Rain and Dew by the green parts of Plants." The following meeting will be the Society's Great Summer Show, to be held at Holland House, Kensington, on July 7th and 8th.

The Manchester and North of England Orchid Society offers a very attractive programme for its coming 1908-9 Session, which opens on June 4th. There are five "Cup" Competitions open to amateurs who are members of the Society. Messrs. Charlesworth & Co., Heaton, Bradford, offer a 50-guinea Cup to the amateur exhibitor who gains the largest number of points for plants which have not hitherto been dealt with by the Society. The competition is to be repeated in three successive years, a new cup of the same value being given annually. Messrs. Sander & Sons, St. Albans and Bruges, offer a 50-guinea Cup for *Cypripediums*, which may be won

outright by an amateur exhibitor who is successful three times, not necessarily in succession. H. J. Bromilow, Esq., Rainhill, Lancs., offers a valuable Cup to the most successful exhibitor of general displays of Orchids at the meetings. Messrs. Hugh Low & Co., Enfield, continue their competition for Cattleyas and Lælias. Lastly, Z. A. Ward, Esq., Northenden, offers a Cup to the exhibitor gaining the greatest number of points for Odontoglossums. The secretary, Mr. P. Weathers, Old Trafford, will be pleased to give any information to intending exhibitors.

A Flower Show will be held in connection with the Franco-British Exhibition, at Shepherd's Bush, on June 24th, 25th, and 26th, at which a class is included for a group of Orchids 20ft. by 5ft., arranged with palms or small ferns. The first prize is a Gold Medal and £5; second prize, Silver-gilt Medal and £3, and third prize, Silver Medal and £2. Further particulars may be obtained of the Superintendent, Wood Lane, Shepherd's Bush, London.

The very fine groups of Orchids exhibited by M. Ch. Vuylsteke and by Major Holford at the recent Ghent Show are illustrated in *Le Jardin* for May 5th, pp. 134, 135.

HYBRIDISING WITH MIXED POLLEN.—Another experiment of hybridising with mixed pollen has been made, as the following letter will show. Mrs. Ida Brandt, of Zurich, writes: "On August 2nd, 1903, *Cypripedium* × *lo grande* was crossed with three different sorts of pollen, *C. Chamberlainianum*, *C. superbiens*, and *C. Curtisii*. The seed was sown on August 27th, 1904, and eighteen plants were raised from the capsule, all showing differently tessellated leaves, some resembling those of *C. × marmorophyllum*, and others more like *C. Curtisii*. The enclosed flower is the first that has appeared out of the batch." The flower sent has very handsomely spotted petals, a broad, well-coloured dorsal sepal, and a pouch nearly like *C. superbiens*, from which we think the fertilising pollen tube must have been derived. Of course, *C. Curtisii* would have given a very similar hybrid. We hope that all the seedlings will be allowed to flower, so that the complete result may be recorded, which should be interesting.

ORCHID PORTRAITS.

AERIDES VANDARUM, KIRK'S VAR.—*Journ. Hort.*, 1908, i. p. 465, with fig.

BULBOPHYLLUM MIRUM, J. J. Sm.—*Gard. Chron.*, 1908, i. pp. 348, 353, fig. 156.

CATTLEYA MENDELII, HOLFORD'S VAR.—*Gard. Chron.*, 1908, i. pp. 278, 284, fig. 122.

CATTLEYA × PRINCESSE CLEMENTINE.—*Rev. Hort. Belge*, 1908, p. 165, with tab.

CATTLEYA SCHRÆDERÆ, THE BARON.—*Journ. Hort.*, 1908, i. p. 443, with fig.

CYPRIPEDIUM BELLATULUM, EXHIMS VAR.—*Journ. Hort.* 1908, i. p. 419, with fig.

LÆLIO-CATTLEYA DOCTEUR DELAC.—*Rev. Hort.*, 1908, p. 228, with tab.

LÆLIO-CATTLEYA ELVA, WESTONBIRT VAR.—*Gard. Chron.*, 1908, i. p. 349, fig. 157.

LIPARIS TABULARIS, Rolfe.—*Bot. Mag.*, t. 8195.

MILTONIA VEXILLARIA (specimen plant).—*Gard. Mag.*, 1908, p. 420, with fig. VAR. VIRGINALE.—*Gard. Chron.*, 1908, i. p. 351, fig. 159. WESTONBIRT VAR.—*Gard. Chron.*, 1908, i. p. 352, fig. 160.

ODONTIODA CHARLESWORTHII.—*Gard. Chron.*, 1908, i. p. 353, fig. 161.

ODONTIODA ST.-FUSCIEN.—*Gard. Chron.*, 1908, i. p. 353, fig. 162.

ODONTOGLOSSUM CRISPUM LEONARD PERFECT.—*Gard. Chron.*, 1908, i. p. 321, fig. 144; *Gard. Mag.*, 1908, p. 391, with fig.

ODONTOGLOSSUM × LAIRESSEI.—*Gard. Chron.*, 1908, i. p. 328, fig. 147.

ODONTOGLOSSUM × WILCKEANUM IMPERIALE.—*Gard. Chron.*, 1908, i. p. 287, fig. 129.

ODONTONIA LAIRESSEÆ.—*Gard. Chron.*, 1908, i. p. 329, fig. 148.

ONCIDIUM GARDNERI.—*Journ. Hort.*, 1908, i. p. 489, with fig.

SOPHRONITIS GRANDIFLORA (specimen plant).—*Gard. Chron.*, 1908, i. pp. 281, 284, fig. 124.

ANSWERS TO CORRESPONDENTS.

[Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An ADDRESSED postcard must be sent if a reply by post is desired (abroad, reply postcards should be used). Subjects of special interest will be dealt with in the body of the work].

A. F. 2, *Cymbidium Lowianum*. 1, much like the preceding except for its very narrow leaf. Is the country known? 3, probably a secondary hybrid of *Cypripedium* × *Harrisianum*. Have you no clue to the parentage? 4, 5, 8, probably forms of *C. × aureum*, the hybrid between *C. Spicerianum* and *C. × Sallieri*, which varies enormously. 6, *Odontoglossum* × *Adrianæ*. 7, *Miltonia cuneata*.

J. B. 1, noted elsewhere. 2, *Acanthophippium javanicum*. 3, *Bulbophyllum Lobbii*, small form. 4, *Pleurothallis* sp. not yet identified. 5, *Epidendrum Candollei*. 6, *Govenia* sp. not identified. 7, *Cyrtopodium Andersoni*. 8, *Sobralia* sp. not identified, but flowers decayed. *Sobralias* travel much better dried, or the flower divided longitudinally and the two halves pressed flat between blotting paper.

G. H. H. *Nicholson's Dictionary of Gardening* gives the pronunciation as A-er-i' dēs and Phal-æ-nop'-sis, but in the former word the accent is not generally placed on the third syllable.

C. T. C. *Odontoglossum* × *Adrianæ*.

G. H. D. *Lycaste brevispatha*, *Aërides crassifolium*, and *Saccolabium miniatum*.

Photographs received, with thanks. Ch. V., J.B., W.E.P.

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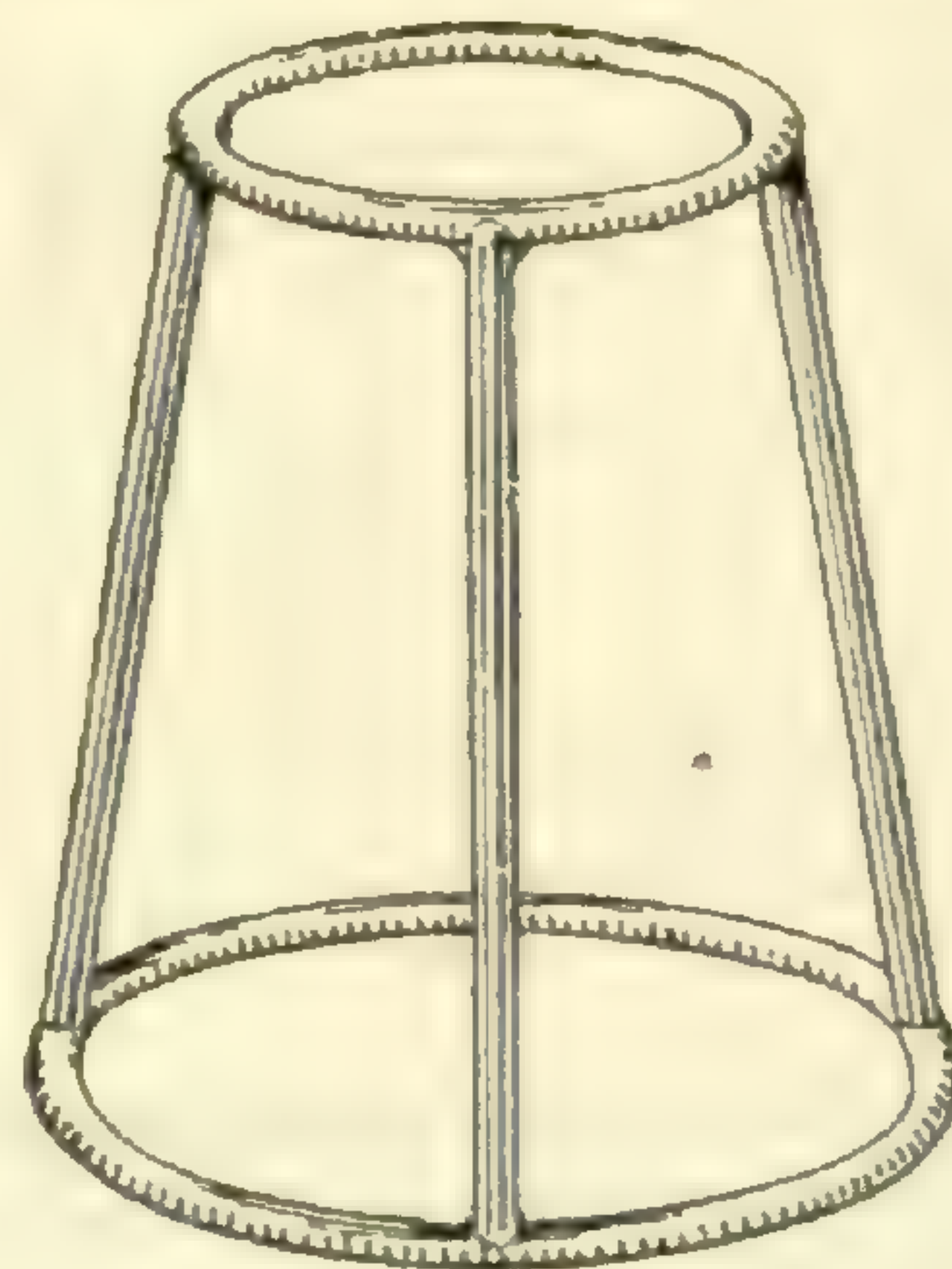
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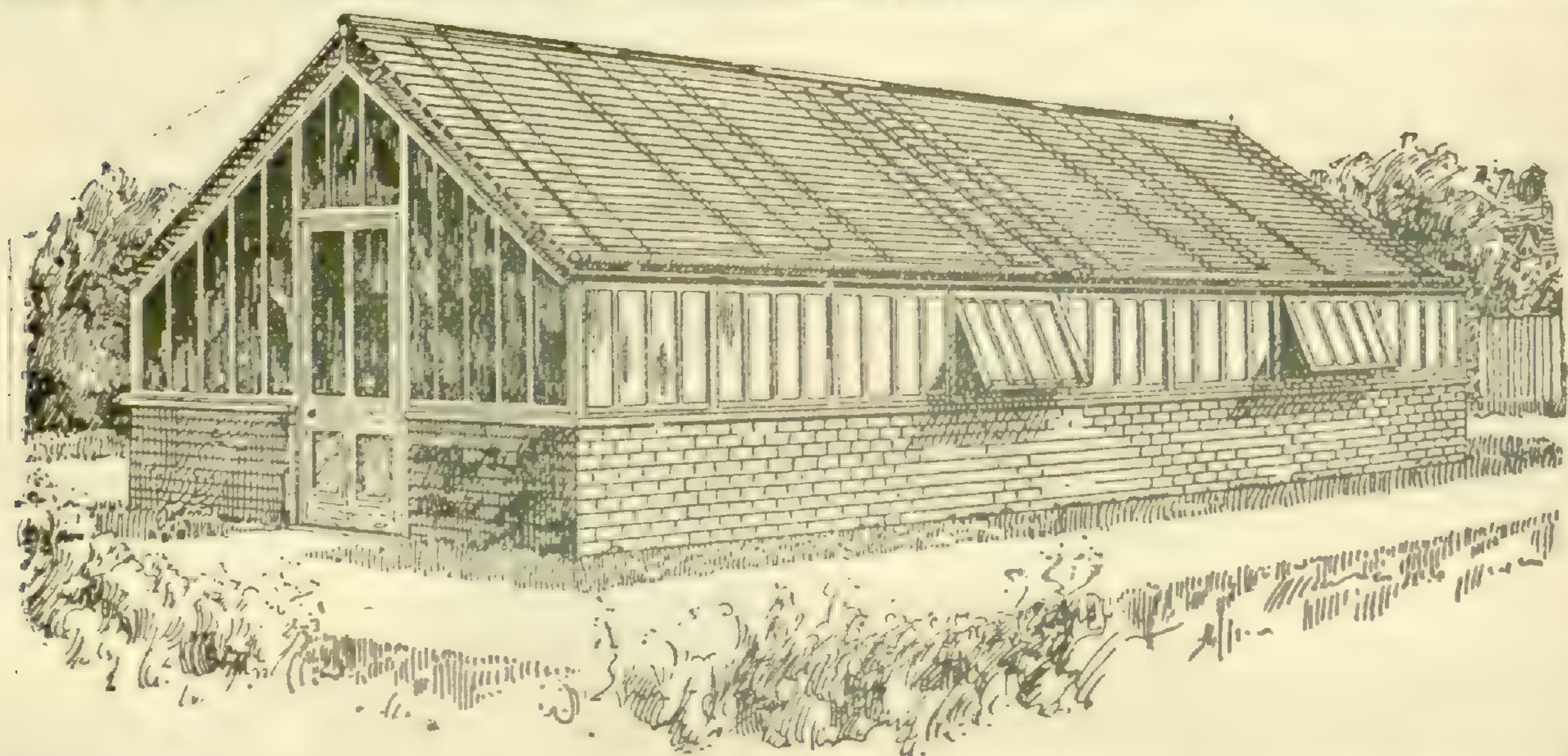
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THE

ORCHID REVIEW:

An Illustrated Monthly Journal of Orchidology.

Contents.

	PAGE		PAGE
Answers to Correspondents	224	Orchids at Brussels	193
Bromheadia Finlaysoniana	200	Brussels Botanic Garden	193
Calendar of Operations for July	210	M. Peeters' Establishment	194
Catasetum discolor	221	Orchids at Kew	219
Cattleya Lueddemanniana alba (fig. 26) ...	201	Orchids at Rainhill, Lancashire	213
Notes	223	Orchids in season	222
Odontoglossum crispum	220	Orchids, malformed	221
Odontoglossum × egregium var. Madame		Orchids, their structure, development and	
Jules Hye de Crom (fig. 27)	209	fertilisation	215
Odontoglossum hybrids	208	Societies	202
Orchid Portraits	223	Royal Horticultural	202
Orchids at Bruges	197	Manchester and North of England	
		Orchid	205

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Volumes I. to XV. can be supplied unbound at 6/-, or bound in cloth, 7/6, postage extra. Cost of postage: book post, 9d. per volume; parcel post within the United Kingdom only, 5d. per single volume (series by weight).

Also cases for binding either volume at 1/6 each, post free throughout the postal union.

All Subscriptions, Advertisements, Communications and Books for review, should be addressed:—The **Editor of the Orchid Review**, Lawn Crescent, Kew.

Cheques and Postal Orders (sent as above) should be made payable to FRANK LESLIE & Co., and, to ensure safety in transit, should be crossed "& Co."

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THE ORCHID REVIEW.

VOL. XVI.]

JULY, 1908.

[No. 187.

ORCHIDS AT BRUSSELS.

A CONSIDERABLE number of Orchids are cultivated at the Brussels Botanic Garden, and in looking through the collection recently, in company with the able Curator, M. Louis Gentil, we noted some interesting things in bloom, with others that are seldom met with in cultivation, particularly a number of botanical species from the Congo. Besides those grown in the usual Orchid houses, we found others scattered in suitable places through different houses, and in a very interesting Ethological collection, intended to represent some of the adaptations of the vegetable kingdom to the conditions of their existence, we found a section devoted to epiphytes, in which the plants were growing on the tree trunks in a natural manner, and among them *Epidendrum Parkinsonianum*, *Brassavola fragrans*, *Scuticaria*, *Nanodes Medusæ*, *Cœlogyne*, and *Oncidium*, a species of the latter being in bloom. Another house contained a number of botanical Orchids from the Straits Settlements, which were being established, but they had not travelled well, and we only noticed *Dendrobium secundum* in flower.

Coming to the Orchid houses proper, we noted various species in flower, as *Cypripedium barbatum* and *C. × Petri*, *Cœlogyne elegans* and *Massangeana*, *Physosiphon Mooreana*, the yellow form of *Maxillaria variabilis*, *M. Meleagris*, *Epidendrum cochleatum*, *Scuticaria Hadwenii*, a species of *Stelis*, *Oncidium pumilum*, *Xylobium squalens*, *Lycaste Skinneri*, and other familiar species. There were also several plants of *Cymbidium Lowianum* in bloom, but the flowers, with scarcely an exception, were affected with some fungus which gave them a speckled and hairy appearance and disfigured them considerably. We do not remember to have noticed this fungus before, and it would be interesting to know what it is, and how to get rid of it, for it is a very undesirable acquisition.

The next two houses contained quite a general representative collection, and we noted in bloom examples of *Dendrobium densiflorum* and *chrysotoxum*, *Miltonia spectabilis*, *Bulbophyllum gibbosum*, *Phragmopedilum × Sedeni candidulum*, *Maxillaria Binoti*, *Cochlioda vulcanica*, *Cypripedium barbatum Warneri*, *C. × Harrisianum Dauthieri*, *Vandas*, *Odontoglossum Egertonianum*, and others.

In the Victoria house we noticed a fine plant of *Vanilla Pompona*,

trained on the roof, and among a few Orchids suspended underneath was a plant of *Polystachya affinis* in flower. In other houses we saw plants of *Vanilla planifolia*, *Pompona*, and *africana*, trained on wires beneath the roof, and the latter, we were told, maintains its character of refusing to bloom, although apparently quite strong enough. We also noted a plant of the rare and pretty *Eulophia Lubbersii* in bloom, with *E. guineensis*, *Bulbophyllum barbigerum*, *Polystachya polychaete*, *Megaclinium Arnoldianum*, &c. Here was a number of Orchids from the Congo, including *Angræcum*, *Listrostachys*, *Polystachyas*, *Bulbophyllums*, *Megacliniams*, &c., some of them species which have recently been described.

M. PEETERS' ESTABLISHMENT.—Orchids are very extensively grown by M. A. A. Peeters, who has a large home establishment at St. Gilles, largely devoted to the production of cut flowers for market, and a second establishment in the suburbs, where the *Odontoglossums*, and hybrid Orchids generally, are grown. In the former large numbers of *Cattleyas* and others suitable for cutting are to be seen, and one house contains hundreds of fine plants of *Vanda cœrulea* and others. The blooms are chiefly sent to Brussels and Paris, the demand for cut Orchids, especially in the latter city, being very considerable.

The second establishment was reached by a short drive, and here we found numerous houses devoted to hybrid *Cattleyas* and *Lælio-cattleyas*, *Phalænopsis*, *Cypripediums*, *Odontoglossums*, and various other things, the whole collection being in most excellent condition.

We first entered a house, some 65 feet long, one side of which was devoted to *Phalænopsis amabilis Rimestadiana*. The plants were in the most robust condition, with large healthy leaves, the majority being in bloom, and a charming display they made. A certain amount of variation was noticed, and one plant had the scape pale yellowish-green, and the lip quite devoid of purple markings. The plants are kept moderately dry at the roots, and air is given every day. The other side of the house was devoted to *P. Schilleriana* and *Cattleyas*, and we also noted a good *P. Sanderiana*, and three well-flowered plants of *Dendrobium Devonianum*. In the succeeding *Cattleya* house we noted some good *C. Mendelii*, *C. Mossiæ*, and a few good *Lælio-cattleyas* in flower. Next came a house of *Dendrobium Wardianum*, and another of *Vanda cœrulea*, all in thriving condition. We then passed through a succession of *Cattleya* and *Cypripedium* houses, and saw fine batches of seedlings in various stages of growth, and many established plants. In one of these was a nice batch of *C. bellatulum* in flower, and a fine batch of seedlings of *C. × Rolfei* was pointed out, also a plant which had been in flower ever since January, possibly a hybrid between *C. villosum* and *C. × Crossianum*.

The established plants contained most of the leading varieties, but we must pass them over. *C. Lawrenceanum* *Hyeaeanum* was in bud, and among the seedlings pointed out was a batch of *C. × Charles Canham × Fairrieanum*, and another of *C. insigne Sanderæ × Maudiaë*, with a single one of *C. Madame Alfred Bleu × Fairrieanum*. *C. insigne Sanderæ × aureum Surprise*, it was pointed out, yielded an ordinary spotted *C. insigne*.

In another house it was interesting to see a few capsules and seedlings of *C. Fairrieanum*, also a nice batch of *C. × Madame Alfred Bleu*, with very beautiful foliage, and some good *C. niveum* in bloom, with plants of *C. × Harrisianum superbum*, *C. × Pollettianum*, a very good *C. × Leonidas citrinum*, with very bright yellow petals and lip, and a number of other good things, which we had to pass over. Good plants of *Vanda × Maronæ* and *V. × Miss Joaquim* were pointed out, and one of *Bulbophyllum Ericssoni*.

Among *Cattleyas* in flower we noted two good *C. intermedia alba*, a lot of *C. Mendelii*, *C. × calummata*, *C. Gaskelliana × amethystoglossa*, and a lot of the very fragrant *C. Schröderæ*, a few being rather deeply-coloured, while *C. Warneri alba*, and *C. × Madame Myra Peeters* were in bud. Hybrid *Cattleyas* were very numerous, some of them from albino parents, but we had very little time for details, though M. Peeters pointed out that the white *C. × Parthenia nobilissima × Hardyana alba*, had produced some white forms, and others with blush-coloured sepals and petals and richly coloured lips.

Among *Lælio-cattleyas* in bloom we noted a fine *L.-c. Cholletiana*, and the richly coloured *L.-c. La Vesuve*. We also saw *L.-c. elegans × Brassavola Digbyana*, with a good light purple flower, *Epidendrum Stamfordianum*, *Phaius × Norman*, *Miltonia vexillaria memoria G. D. Owen*, with six flowers, &c. A batch of about ten seedlings from *Miltonia Warscewiczii × Odontoglossum × Lambeauianum* was also interesting, and there were capsules on the same species of *Miltonia* as the result of crossing with *O. crispum Franz Masereel*.

The *Odontoglossums* formed a specially interesting feature, because of the rapid progress that is being made in raising these beautiful Orchids from seed, and the numerous fine forms in flower. Seven long houses were devoted to them, and the first three contained chiefly hybrids, of which there was a very fine display.

In the first house entered there was a remarkable series of *O. × Lambeauianum* in flower, showing a very wide range of variation in colour and markings. It included forms with white and rosy ground colour, with few or many large or small spots, and a very considerable variation in the shape and details of the lip. Some of them were very handsome.

Even more remarkable was a batch of *O.* × *Fascinator*, obtained by crossing *O.* × *Adrianæ* with a blotched form of *O.* *crispum*, of which a very large number were in flower. These included forms with the ground colour white, rose, and both light and dark yellow, while the spots showed an equally wide range of variation, in size, number, and colour, showing various degrees of reversion to the original species. It would seem incredible without positive evidence, that such diverse forms could have come out of the same capsule of seed. Here again some of the forms were very good in shape and exquisitely marked.

Some forms of *O.* *crispum* in the same house, raised from *O.* *c.* *Mariæ* × *O.* *c.* *Lucianii*, were very good, and in some cases very highly coloured. There were also seedlings in almost every stage, as well as numerous capsules. About fourteen pots were pointed out in which the compost was literally covered with germinating seedlings, while on other pots on which similiar seeds had been sown not a seedling could be found, a difference apparently due to the condition of the compost or to the presence or absence of suitable fungi. There were also many interesting *Cochlioda* crosses, among those pointed out being *C.* *Nœtzliana* crossed with *O.* × *Lambeauianum* and *O.* *crispum* *Cooksonæ*, both of which prove to be very slow growers.

This and the next two houses each contained about two hundred different forms in flower, and we can only mention a few of the remainder. There were some handsomely blotched forms of *O.* × *armainvillierense*, some good *O.* × *loochristiense* and *O.* × *Hallio-crispum*, *O.* × *excellens*, a very pretty rosy hybrid raised from *O.* *crispum* *lilacinum* × *Ruckerianum*, and *O.* *triumphans* × *polyxanthum*, a very yellow hybrid. We also saw the handsome *O.* × *Wilckeanum* *albens* in bloom, which of course is a natural hybrid.

The remaining houses were largely devoted to imported *O.* *crispum* and to the propagation of choice varieties from back bulbs, of which there were many interesting examples. Among the imported plants many were in bloom, showing the usual amount of variation. We noticed also a fine plant of *Odontoglossum* *brevifolium* producing a spike, and M. Peeters remarked that numerous crosses with that and *O.* *crispum* had been made, but always without result. Lastly we may mention a plant of *Oncidium* *Leopoldianum*, for which £20 was paid many years ago, but which still refuses to flower, although various methods of treatment have been tried. It can only be described as a bad grower, though it is hoped that it may ultimately gain strength enough to bloom. Only about three plants of the importation remain, and the one which flowered in the collection of E. Ashworth, Esq., proved to be the allied *O.* *corynephorum*, Lindl.

Regarding cultural methods we may mention that M. Peeters attaches

great importance to the atmospheric conditions of the houses, the proper adjustment of the shading, ventilation, and supply of moisture. Polypodium fibre and sphagnum moss are chiefly used as a compost, and great care is taken to avoid over-watering, the treatment in this respect being what may be termed on the dry side. Cleanliness is everywhere apparent, and in this connection may be mentioned the use of tobacco stalks on the hot water pipes which keeps thrip in check. The plants are everywhere in the most thriving condition, which shows how well their requirements are met. As regards the seedling *Odontoglossums* we may add that great care is taken to keep accurate records, and as the seedlings are carefully numbered the parentage can easily be traced. This is a matter of the highest importance, and we hope that it will be possible to compile some interesting information in the near future. We spent a very pleasant afternoon among the plants, and must congratulate M. Peeters upon his success, and upon the excellent condition of the establishment generally.

ORCHIDS AT BRUGES.

ORCHID culture is carried on most extensively at the Bruges establishment of Messrs. Sander & Sons, which we have just had the pleasure of seeing, and so numerous are the Orchid houses that we quite lost count of them, but the plants themselves formed a remarkable series, both imported and home-raised, and our notes contain only a fraction of the interesting things which we saw.

The *Odontoglossum* houses are numerous, and contain thousands of plants of the various popular species, large numbers of which were in bloom, making a very fine display. Those noted included many fine forms of *O. crispum*, *luteopurpureum*, *triumphans*, *Pescatorei*, $\times$ *Wilckeanum*, $\times$ *loochristiense*, $\times$ *Adrianæ*, $\times$ *elegans*, *Hunnewellianum*, *pulchellum*, *Edwardii*, &c., while the home-raised seedlings formed an extensive series in all stages, including many fine things in flower. Among the latter were some fine *O. \times Harryano-crispum*, one spike bearing fifteen fine blooms, some good seedlings of *O. crispum* with handsomely blotched flowers, *O. \times altum* with fifteen flowers, some good *O. \times amabile*, two fine plants of *O. \times Thompsonianum* with two and four spikes, some very good *O. \times Wilckeanum*, *O. \times Hiawatha* and *O. \times gemmatum*, which were described at page 158 of our May issue, *O. \times Harryano-triumphans*, *O. \times ardentissimum* $\times$ *Hunnewellianum*, *O. \times Adrianæ* $\times$ *triumphans*, and various others. One seedling was noticed with variegated leaves. Many plants were bearing capsules, and a capsule of *O. ramosissimum* was shedding its seeds, but we did not note the cross. Polypodium fibre and sphagnum moss are used as a compost, and we noted many small seedlings in tiny pots

which were bedded out into pans of moss, so as to prevent them from drying up too quickly. One side of a house was taken up by seedlings in various stages, from various choice crosses, from which much is expected. A plant of *Oncidium cucullatum* was bearing a capsule, as the result of crossing with some *Odontoglossum*, though we did not note the cross. In many cases we noted young seedlings germinating on the parent plants.

A plant of *Odontonia Lairesseæ* was bearing three fine panicles, the best with six side branches and an aggregate of 87 flowers, making a very fine display. Other cool Orchids in bloom were a number of *Cymbidium Lowianum*, *Ada aurantiaca*, the brilliant *Cochlioda Noëtzliana*, a lot of brilliant *Masdevallias*, and many others.

Passing into one of the Warm houses we found some *Phalænopsis amabilis* and a richly-coloured *P. Lueddemanniana*, a fine batch of imported *P. Schilleriana*, a well-bloomed plant of *Dendrobium Harveyanum* with its remarkable fringed petals, *D. aggregatum*, *D. Falconeri*, *D. Wardianum*, &c., while a plant of the rare *D. Guibertianum* was pointed out as one of the few remaining plants of an importation made some thirty years ago. We noted also *Oncidium Kramerianum* and *Vanda cœrulea*.

The next house contained a remarkably fine batch of the latter species, all sturdy, compact plants, and well-furnished with roots. These scarcely bore out the reputation the plant has of being a bad grower. One point in their culture which was insisted upon was that of getting the roots well into the compost, a by no means easy matter in the case of such stout brittle organs, but Mr. Sander showed how they can be brought down when long enough, and even if they appear to break it is only the outer covering which ruptures, and this does not affect the subsequent vitality of the roots.

We now passed through some *Cattleya* houses, and saw a very fine lot of *C. Schroëderæ*, about fifty plants being in bloom, showing a large amount of variation, and several very richly-coloured forms. This is certainly a very beautiful *Cattleya*, and its heliotrope-like fragrance is delicious. There were also good plants of *C. gigas Sanderiana*, and *C. intermedia*, *Lælio-cattleya Schilleriana*, and a number of *Brassocattleyas* in bloom. A lot of capsules showed that the work of hybridisation is well to the front.

After passing through some houses of *Dendrobiums*, with plants in thriving condition, and noting good batches of *Vanda Kimballiana*, *Amesiana*, and *Renanthera Imschootiana*, we came to a house containing many good *Miltonias* in flower. Here we saw some fine *M. Roezlii* and *M. Phalænopsis*, and a lot of *M. vexillaria* in thriving condition, including many fine varieties. There was also a fine batch of the hybrid *M. × St. André* (*Roezlii × Bleuana splendens*), of which a good many have already

bloomed. There were also some good *M. Warscewiczii*, and a good batch of *Cypripedium Fairrieanum*, some of the plants bearing capsules, with various other things.

In the houses devoted to *Cypripediums* were many interesting species and hybrids in bloom, including a fine *C. Rothschildianum*, the rare *C. Druryi*, nice batches of *C. bellatulum* and *niveum*, *C. callosum Sanderæ*, a fine *C. hirsutissimum*, a lot of *C. Curtisii*, and many good hybrids which must be passed over. There were also numerous seedlings in all stages.

In succeeding houses we noted various interesting things in flower, including some good *Oncidium Marshallianum*, *O. leucochilum*, *Cœlogyne speciosa*, *Xylobium leontoglossum*, *Maxillaria variabilis*, *Angræcum sesquipedale*, *Chysis bractescens*, *Bifrenaria Harrisonæ*, *Lycaste Skinneri*, and a number of botanical curios, one of the most interesting being the pretty little *Chytroglossa Marileoniæ*, which is noted at page 159.

Coming to a range of houses largely devoted to *Cattleyas* and allies we noted large batches of *C. Mendelii*, *Mossiæ*, *Leopoldi*, *Trianæ*, and numerous other species, some very fine *C. Trianæ* being in bloom, with *C. Lawrenceana*, *C. citrina*, and a few others. We noted also batches of *Lælia purpurata*, *pumila*, and various others. A fine batch of white *L. anceps* was also pointed out. We also saw a good lot of *Oncidium Cavendishianum*, a few *Lælio-cattleya elegans*, and a number of good hybrids of various kinds. In adjoining houses there were also large batches of *Odontoglossum crispum* and other well-known species, a great many plants being in flower, with a sprinkling of *O. × Adrianæ* and a few other familiar hybrids. An enormous number of these beautiful plants are grown.

The houses are thoroughly well adapted to the requirements of the plants, the arrangements for heating, shading, watering, and ventilation being arranged on the latest principles, and cleanliness and good culture everywhere prevail. *Polypodium* fibre and sphagnum moss are chiefly used for potting, and moderation in the use of the watering-can is practised. An advantage which is enjoyed to the full in such an establishment is that plants can be brought together which require the same treatment, and certain it is that many of the genera are grown in enormous quantities, and although hybridising is carried on on a most extensive scale, a very large business is done with imported plants. A visit to such an establishment enables one to realise to some extent what an important industry Orchid growing is at the present day.

Many other plants are grown here, but we are only concerned with Orchids, which are evidently a growing feature of the establishment, and Messrs. Sander must be congratulated on their enterprise, and the highly successful culture seen in all departments.

BROMHEADIA FINLAYSONIANA.

A VERY distinct Malayan Orchid has again appeared in cultivation, namely *Bromheadia Finlaysoniana*, Rchb. f.—better known under its other name of *B. palustris*, Lindl.—a plant received from the Singapore Botanic Garden having just flowered at Kew. It was originally introduced to cultivation over sixty years ago, and flowered with J. D. Llewelyn, Esq., at Penllergare, who received it from Cuming, with the information that it had been “dug out of a bog in Sumatra.” Lindley had previously seen a dried specimen collected in Singapore by Finlayson, and described it under the name of *Grammatophyllum*? *Finlaysonianum* (*Gen. & Sp. Orch.* p. 173), and now recognizing its identity with the cultivated plant, and its distinctness from *Grammatophyllum*, he described it under the name of *Bromheadia palustris*, the genus being dedicated to Sir Edward French Bromhead, F.R.S. Soon afterwards it bloomed in the collection of the Duke of Northumberland, at Sion House, from which source it was figured both in the *Botanical Magazine* (t. 4001), and the *Botanical Register* (1844, t. 18). It was not inaptly compared with *Epidendrum elongatum* in habit, but the flowers are much larger, though, unfortunately, they only last a single day, being more fleeting than many *Sobralias*, to which they bear some little resemblance. They are white, or faintly tinged with pink, with a large yellow area on the disc of the lip, and some purple veining on the side lobes. The segments are about $1\frac{1}{2}$ inches long. The species, according to Mr. Ridley, is very common in Singapore, growing usually among the ferns and long grasses, in open districts, rarely in shady or damp places. It is distributed over the whole of the Malay Peninsula, from Siam southwards, and extends through the Malay Islands from Sumatra to Borneo and the Philippines. It is said to be a sun-loving plant, and, like *Dendrobium crumenatum*, and some others, periodic in its flowering, though comparatively seldom out of bloom. The flowers are fertilised by a species of carpenter bee (*Xylocopa*). It grows from a little over a foot up to about five feet high, and occasionally to as much as eight feet in damp places. The inflorescence is flexuose, and continues to elongate and flower for a long time, the flowers coming from the axils of cup-shaped bracts, which are closely and distichously arranged on the axis. The species was also described by Griffith as *Cœlogyne caulescens* (*Notul.* iii. p. 282). Several new species have recently been described by Ridley, bringing the number up to eight, of which three are terrestrial (including the present one) and five epiphytic. None of the others have been introduced to Europe, and can only be described as of botanical interest. The epiphytic kinds are more comparable with *Dendrobium* section *Aporum* in habit.

R. A. R.

CATTLEYA LUEDDEMANNIANA ALBA.

THE beautiful albino here figured is the one mentioned at page 127 as having been received from Messrs. Hugh Low & Co. under the name of *C. Lueddemanniana alba* var. *Empress*. It was received from Venezuela early in 1907, and has all the characters of the original *C. Lueddemanniana alba*, which flowered in the collection of M. F. Finet, of Argenteuil, in 1886 (*Orchidophile*, 1886, p. 365), and was afterwards figured in *Reichenbachia*



Fig. 26. CATTLEYA LUEDDEMANNIANA ALBA.

(ser. 2, ii. p. 59, t. 74). The flowers are of a delicate semi-transparent white, with the disc of the lip light yellow. The figure is considerably reduced in size, as the flower measured over six inches in diameter. The history of this rare and beautiful variety was given at page 326 of our sixth volume, when it was pointed out that it received a First-class Certificate from the

Royal Horticultural Society in September, 1892 (misprinted 1822), under the name of *Cattleya speciosissima Sanderiana*, when exhibited by W. R. Lee, Esq. It also received a First-class Certificate from both the R.H.S. and the Manchester Orchid Society in September, 1899, when exhibited by W. Duckworth, Esq., under its accepted name of *C. Lueddemanniana alba*. It agrees with the type except in colour, and is a chaste and very beautiful form.

SOCIETIES.

ROYAL HORTICULTURAL.

A MEETING of this Society was held at the Royal Horticultural Hall, Vincent Square, Westminster, on June 9th, last, when there was a very fine display of choice Orchids, and the awards consisted of seven medals, three First-class Certificates, two Awards of Merit, and one Cultural Commendation.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), staged a small group of choice *Odontoglossums*, to which a Silver Banksian Medal was awarded. It contained a good form of *O. × Lambeauianum*, *O. × Urania* (*crispum × cristatellum*), *O. × Persephone* (*Pescatorei × Adrianæ*), and two good forms of *O. × crispodinei*, one having a white ground, the other light yellow, and both bearing a few large roundish blotches, together with several good *O. × Queen Alexandra*, the variety *Crawshayanum* receiving a First-class Certificate. It is a very fine form with broad segments, and a yellow ground colour, which is nearly obliterated by the heavy purple-brown blotches, while the lip is white in front, and prettily spotted with rose-purple from the base to beyond the middle.

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. Ballantine), sent two very beautiful Orchids, each of which gained a First-class Certificate. *Odontoglossum × Phœbe* (*cirrhosum × crispum*) is a particularly fine form, with broad segments, regularly blotched with deep purplish red, and a broad longitudinal band of similar colour on the petals, while the lip bears a large blotch in front of the yellow crest. *Miltonia × St. André* (*Roezlii × Bleuana* var. *splendens*) is a delicately tinted flower of fine shape, and the ground colour is white, with a large violet-purple blotch on the lower half of the petals, while the lip bears a number of brownish red radiating lines, the three central ones being tinged with purple.

W. Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), received an Award of Merit for *Miltonia × Bleuana Stevensii* (*Roezlii alba × vexillaria Leopoldi*), a charming white form, with red-brown lines at the base of the lip. Half-a-dozen well-bloomed plants were shown.

J. B. Joel, Esq., Childwickbury, St. Albans, received a Cultural

Commendation for a fine plant of *Cypripedium Rothschildianum*, Northaw var., the best spike bearing the unusual number of six flowers and one bud.

G. W. Bird, Esq., Manor House, West Wickham (gr. Mr. Redden), sent *Odontioda wickhamiensis*, said to be a hybrid from *Odontoglossum crispum* and *Cochlioda rosea*, though some members of the Committee thought it was *Odontioda heatonensis*.

Walter Cobb, Esq., Normanhurst, Rusper (gr. Mr. Salter), sent a good plant of *Lælio-cattleya Martinetii dulcotensis*, with two spikes and seven flowers, having bronzy salmon-coloured sepals and petals, and a dark purple lip.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a choice group of good things, to which a Silver Flora Medal was given. It contained a selection of choice hybrid *Odontoglossums*, a strong plant of *Renanthera Imschootiana* with a very fine panicle of its brilliant crimson flowers, a very dark form of *Lælio-cattleya Dominiana*, L.-c. G. S. Ball, with thirteen bright apricot-yellow flowers, fine examples of L.-c. *Canhamiana*, and its variety *alba*, &c.

Messrs. Hugh Low & Co., Enfield, received a Silver Flora Medal for a brilliant group, including many fine *Cattleya Mossiæ*, two *C. M. Reineckeana*, some good *C. Mendelii*, *C. intermedia alba*, *Lælia purpurata*, some good *Lælio-cattleyas* and *Odontoglossums*, *Cypripedium* × *William Lloyd* var. *magnificum*, *C.* × *Gowerianum*, Schofield's var., and many other good things.

Messrs. Sander & Sons, St. Albans, also received a Silver Flora Medal for a select group, including some good varieties of *Cattleyas Mendelii* and *Mossiæ*, a fine specimen of *Lælio-cattleya exoniensis*, *Oncidium ampliatus majus*, a well-bloomed *Lycaste lanipes*, *Renanthera Imschootiana*, *Sobralia* × *Siebertiana* (*macrantha alba* × *Hodgkinsoni*), a large mauve-purple flower with a white throat to the lip, *Bulbophyllum orthoglossum*, a Malayan species having large yellow flowers, striped and suffused with brown, *Phaius* × *Cooksonæ*, *Odontoglossum* × *Hallio-crispum*, *O.* × *ardentissimum*, and many other good *Odontoglossums*.

Messrs. J. & A. A. McBean, Cooksbridge, received a Silver Banksian Medal for a good group of well-grown *Odontoglossum crispum*, *O. c. xanthotes*, a fine example of *O. luteopurpureum* with a spike of fourteen blooms, a good *Cattleya Mossiæ Reineckeana*, some finely-coloured forms of the species, &c. An Award of Merit was given to *Odontoglossum gloriosum citrinum*, a pale citron-yellow variety, in which the usual blotches are nearly obliterated.

Mr. A. W. Jensen, Lindfield, Sussex, received a Silver Banksian Medal for a very good group of *Cattleyas* and *Odontoglossum crispum*.

Messrs. Stanley & Co., Chase Side, Southgate, received a Silver

Banksian Medal for a fine group of *Cattleya Mossiæ*, consisting of about eighty plants, and showing the usual amount of variation in colouring.

M. Mertens, Mont St. Amand, Ghent, showed a small group of hybrid *Odontoglossums*.

Messrs. James Veitch & Sons, Chelsea, sent a group of well-grown plants of the beautiful hardy *Cypripedium Reginaë* (*spectabile*), which was remarkably effective.

AT the meeting held on June 23rd there was a very good display of Orchids, and the awards consisted of three medals, one First-class Certificate, three Awards of Merit, and five Botanical Certificates.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), staged a fine group of about thirty hybrid *Odontoglossums*, raised in the collection, to which a Silver Flora Medal was given. It included several good forms of *O. × Queen Alexandra*, a fine *O. × Crawshayanum* (*Harryanum × Hallii*), *O. × Anneris*, *O. × Nemesis*, *O. × Astarte*, *O. × Urania*, *O. × Leo* (*Hallii × triumphans*), and a hybrid between *O. Hallio-crispum* and *O. triumphans*, with yellow ground colour and dark brown blotches, most resembling the preceding. He also sent a good dark form of *Renanthera Imschootiana*.

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. Ballantine), received a First-class Certificate for *Odontoglossum crispum* *Princess of Wales*, a very fine form, having broad white segments, slightly tinged with rose on the sepals, and a brown blotch on the lip, in front of the crest.

Sir Trevor Lawrence, Bart., K.C.V.O., Burford, Dorking (gr. Mr. White), sent an interesting little group, including the rare *Catasetum planiceps*, *Epidendrum aurantiacum*, and several others. Awards of Merit were given to *Epidendrum virens*, a bright green, very fragrant Central American species, and to the orange-coloured *Dendrobium Jerdonianum*, while Botanical Certificates were given to a form of *Eulophia nuda* having pale green sepals and a white lip, and to the rare *Bulbophyllum fusco-purpureum*, whose history was given at page 188 of our last volume.

G. W. Bird, Esq., Manor House, West Wickham (gr. Mr. Redden), received an Award of Merit for *Odontioda wickhamensis* (*Odontoglossum crispum × Cochlioda sanguinea*), a very pretty little hybrid, somewhat resembling *Odontioda heatonensis*, but having broader, less acuminate segments, light rose-pink in colour, with darker purplish rose spots.

J. Foster Alcock, Esq., Exhims, Northchurch, showed a seedling *Sobralia*, having medium-sized flowers tinged with purplish rose.

H. J. Elwes, Esq., Colesborne, Gloucestershire (gr. Mr. Walters), sent a few well-grown *Thunias*.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. Day), exhibited

Odontoglossum crispum, Mrs. Humphrey, a good white form, with clusters of light brown spots on the lower part of the segments.

Lieut.-Col. Holford, Westonbirt, Tetbury (gr. Mr. Alexander), sent a very fine example of *Dendrobium* × *Dalhou-nobile*, most like *D. nobile* in habit, but having much larger flowers.

H. Little, Esq., Baronshalt, Twickenham (gr. Mr. Howard), sent *Læliocattleya epicasta*, Little's var., a large light rosy form with the front of the lip crimson purple.

G. Hamilton-Smith, Esq., Killoran, Finchley (gr. Mr. Coningsby), sent *Lælia* × *Pacavia*, Mrs. G. Hamilton-Smith, a fine rosy lilac flower, with purple veining on the lip.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent *Cattleya Mendelii majestica*, a large white form, tinged with lavender on the petals, and the throat of the lip white, with the front lobe rosy mauve, and *C. M. Venus*, a good white form, with the front of the lip rose-purple, and the disc yellow.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a choice group, which received a Silver Flora Medal. It included a fine white form of *Cattleya Mendelii*, slightly tinged with pink on the front of the lip, a fine home-raised *C. Mossiæ Wageneri* with four flowers, *C. Mossiæ* Mrs. A. Goodson, the flower being rose-purple, handsomely flaked with white, some very fine forms of *Læliocattleya Canhamiana*, the interesting *Ornithocephalus grandiflorus*, and a number of good *Odontoglossums*, *Phalænopsis*, *Miltonias*, and other interesting things. Botanical Certificates were given to the rare Philippine *Phalænopsis Lindenii*, whose history was given at page 296 of our last volume, and to *Bifrenaria tetragona*, a species having greenish sepals and petals, and a white lip suffused with dark purple inside.

Messrs. Stanley & Co., Southgate, received a Silver Banksian Medal for a fine group of *Cattleyas*, including many good forms of *C. Mossiæ*, white and coloured, *C. Mendelii*, *C. Warneri*, and *C. Aclandiæ*.

Messrs. Moore, Ltd., Rawdon, Leeds, received a Botanical Certificate for *Vanda pumila*, a rare species of the *V. cristata* group, having cream-white flowers, lined with purple on the lip. It was found in the Sikkim hills at 2,000 feet elevation.

M. Mertens, Mont St. Amand, Ghent, sent a small group of six hybrid *Odontoglossums*.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

At the Meeting held on June 4th many evidences of the close of the Orchid season were apparent, the groups being fewer and smaller; nevertheless many fine things were exhibited. The following members of the Committee were present: Messrs. E. Ashworth (Chairman), Parker, Cowan,

Ashton, Shill, H. H. Smith, Sander, Stevens, Holmes, Cypher, Upjohn, Keeling, Warburton, Ward, Bromilow, Thorp, and Weathers (Hon. Sec.).

Mr. Wm. Bolton, Wilderspool, Warrington, showed a nice group, including *Odontoglossum crispum* Arthur, *O. c. Bonnyanum*, and two very distinct varieties, one with quaint picotee-like markings on the sepals and petals. Awards of Merit were given to *Cypripedium Lawrenceanum* hackbridgense, and to the very pretty and distinct *C. × Iris* (*Chamberlainianum × Maudiae*).

Messrs. Keeling & Sons, Westgate Hill, Bradford, staged a small group of botanical interest, in which I noted *Masdevallia Bruchmuelleri*, *M. demissa*, *Promenæa citrina*, *Pleurothallis ornatus*, *Cypripedium Hookeræ*, *Dendrobium × Nestor*, &c.

Mr. Birchenall, Alderley Edge, showed two good white *Cattleya Mendelii*, with the faintest colouring on the lip, *Oncidium abortivum*, and *Lycaste Deppei*.

H. J. Bromilow, Esq., Rann Lea, Rainhill (gr. Mr. Morgan), showed *Cypripedium Maudiae magnificum*, and gained an Award of Merit for *C. Lawrenceanum*, Rann Lea var.

Messrs. Sander & Sons, St. Albans and Bruges, staged a showy group, in which were many fine *Lælio-cattleya Canhamiana*, *Brassocattleya Mossio-Digbyana*, *Lælia × Latona × L.-c. Canhamiana* Rex, the beautiful *Odontoglossum crispum Lusitania*, and several others of good quality, unnamed, *O. × ardentissimum*, *O. Harryano-crispum × Adrianæ*, &c. (Silver Medal).

J. McCartney, Esq., Hey House, Bolton, (gr. Mr. Holmes), staged a floriferous group of *Lælias* and *Cattleyas*, in which I noted two well-flowered plants of *C. Skinneri*, and a good specimen plant of *C. Mendelii* with sixteen flowers, a distinct *Lælia tenebrosa*, *Cœlogyne corrugata*, and a cut spike of the rare *Dendrobium secundum*. A Silver Medal was given to the group, and an Award of Merit to *Brassocattleya Digbyano-Mossiae* var. Mrs. McCartney.

Messrs. Charlesworth & Co., Heaton, Bradford, showed a group of fine things, which gained a Silver Medal. I noted two well-flowered plants of *Masdevallia Houtteana*, *M. demissa*, *Cypripedium × Goweri magnificum*, a distinct *Miltonia*, *Odontoglossum × Phœbe*, *O. crispum*, &c. *Lælio-cattleya Fascinator* var. Prince of the Asturias was very good, and gained an Award of Merit.

Messrs. Low & Co., Enfield, staged a fine group of *Lælias* and *Cattleyas*. *C. Mossiae* var. J. McCartney, *C. Mossiae alba* var. Leonora, and *C. Mossiae* var. Blush Queen each gained an Award of Merit, and there were many other good things in the group.

To encourage the smaller growers the Committee decided to offer a

Gold, Silver-gilt and Silver Medal, as first, second and third prizes, to Amateurs not employing a gardener, the points to be calculated at the end of the season. H.T.

Considering the lateness of the season a very fair muster of plants appeared at the meeting held on June 25th. The following members of the Committee were present: — Messrs. E. Ashworth (Chairman), Thorp, Cypher, Ball, Ashton, Shill, Ward, Upjohn, Keeling, Stevens, Warburton, Cowan, Holmes, and Weathers (Hon. Sec.).

Messrs. Hugh Low & Co., Enfield, showed the beautifully tinted *Lælio-cattleya Dora magnifica*, a good *L.-c. Canhamiana*, and a prettily marked *Odontoglossum crispum*.

W. Thompson, Esq., Stone (gr. Mr. Stevens), showed *Masdevallia Harryana albens*, with flowers of creamy white (Award of Merit), an *Odontoglossum* × *Souvenir de Victor Hye*, Walton Grange var.

H. J. Bromilow, Esq., Rann Lea, Rainhill (gr. Mr. Morgan), showed *Lælio-cattleya Phœbe*, with a richly coloured lip (Award of Merit).

S. Gratrix, Esq., West Point, Whalley Range (gr. Mr. Shill), showed a small group of choice plants. *Lælio-cattleya Canhamiana* var. *alportensis*, *Cattleya* × *Pittiana*, *C. × mollis*, *Odontoglossum crispum* Lady White, and *Cypripedium Godefroyæ leucochilum* var. *Exquisite*, all gained Awards of Merit. Several other very good *C. Godefroyæ leucochilum* were included.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a very bright group, including many showy *Cattleyas* and *Lælio-cattleyas*, the best being two or three plants of *L.-c. Fascinator*, *L.-c. Aphrodite*, *Cattleya Mossiæ* var. *Wagneri*, the rare *Odontoglossum* × *Williamsianum* (*O. grande* × *O. Schlieperianum*), with an erect spike of eight flowers, *Cypripedium niveum*, *Ornithocephalus grandiflorus*, &c. (Silver Medal for group).

Max Isaac, Esq., Blundellsands, Liverpool (gr. Mr. Driver), showed good examples of *Cypripedium bellatulum*, *C. Gowerianum*, Schofield's var., *C. callosum Sanderæ*, *C. concolor*, &c.

J. McCartney, Esq., Hey House, Bolton (gr. Mr. Holmes), showed a good group of mixed plants, which gained a Silver Medal. *Cattleya Mossiæ Reineckeana* var. Mrs. J. McCartney gained an Award of Merit. I noted also a good *C. M. Arnoldiana*, several plants of *Phalænopsis amabilis Rimestadiana*, a well-bloomed *Lælio-cattleya General Baden-Powell*, *Cypripedium* × *Euryale*, *C. glaucophyllum*, *Odontoglossum crispum*, *Miltonia vexillaria*, &c.

Mr. J. Birchenall, Alderley Edge, showed a good *Cattleya Mendelii* var. *Rosita* (Award of Merit), *Lycaste Deppei*, *L. Skinneri*, *Cœlogyne Mas-sangeana*, *Epidendrum cochleatum*, *Bollea Lalindei*, &c.

Messrs. Keeling & Sons, Westgate Hill, Bradford, showed a small group,

including the quaint *Cypripedium Parishii*, *C. × gigas*, *Corndean Hall* var., *Cattleya Mossiæ Reineckeana*, *Masdevallia Wageneriana*, *Ornithocephalus grandiflorus*, with others of botanical interest.

Ed. Rogerson, Esq., Oakdene, Didsbury (gr. Mr. Price), showed a beautiful *Cypripedium Godefroyæ* var. *Rogersoni*, of rich spotting and excellent shape, which was awarded a First-class Certificate, and a fine plant of *C. × Mary Beatrice*.

A. Warburton, Esq., Vine House, Haslingden (gr. Mr. Dalglish), staged a very fine group, which for "Cup" purposes was divided into two, and received Silver and Silver-gilt Medals. The *Odontoglossums* were all of good quality, and included *O. c. Perfection*, *O. c. The Countess*, *O. × Lambeauianum* var. *Franz Masereel*, &c. The *Cattleya* group included *C. Mendelii*, *C. Mossiæ*, *C. gigas*, *Lælio-cattleya Canhamiana* var. *Fire King*, and other good things.

Mr. J. Robson, Altrincham, showed *Odontoglossum crispum lilacinum*, well flowered and very beautiful.

Chas. Parker, Esq., Ashton-on-Ribble, Preston, showed a small group, including several plants of *Cypripedium callosum Sanderæ*, *C. × gigas*, *Corndean Hall* var., *C. × Francesii*, *C. × Shillianum*, a brightly-coloured *Odontoglossum maculatum*, a good *Miltonia vexillaria*, &c. (Bronze Medal). *Cattleya Mendelii*, Payne's var., and *Odontoglossum × Rolfeæ × crispo-Harryanum* both received Awards of Merit.

Dr. Hodgkinson, The Grange, Wilmslow (gr. Mr. Woore), showed *Cypripedium Godefroyæ xanthochilum*, and *C. G. xanthochilum* var. *Noel*, the last being particularly good, both in size and shape, also *Odontoglossum crispum Woorei*, a flower of good substance and shape, with rich claret blotches. All three gained Awards of Merit.

ODONTOGLOSSUM HYBRIDS.—"Who raised the first hybrid *Odontoglossum*, and when did it appear?" We cannot say, for the event took place a long time ago, and records were not kept in those days. It may have been some gay butterfly or more serious bee, but the process has evidently been carried on ever since, and yet how little we know about it. It is doubtful whether the insect which fertilises *Odontoglossum* is known. Cannot some of our Orchid collectors give some information on this subject? An *Odontoglossum* house in full flower is a very beautiful sight, but the fertilising insect would certainly not be welcome there; indeed the presence of an uninitiated English bee will sometimes lead to a chase with brooms, scrubbing brushes, or anything else that comes handy, and the enactment of a subsequent tragedy, unless the unfortunate insect makes a hurried exit through the nearest open ventilator. But it would be interesting to know what takes place in the native habitat of the plants.

ODONTOGLOSSUM × EGREGIUM VAR. MADAME JULES
HYE DE CROM.

THE beautiful variety here figured was included in the magnificent group which was staged by M. Ch. Vuylsteke at the recent Ghent Quinquennial Show, and was noted at page 153 as having broad segments of a peculiar bronzy claret hue. The photograph here reproduced has been kindly sent by the raiser, and shows the excellent shape and other details of the flower very clearly. The peculiar bronzy claret colour is diffused almost throughout the sepals and petals, leaving a very few pale markings at the margin and extremities. The lip, however, has more white in it, and its colour



Fig. 27. O. × EGREGIUM VAR. MADAME JULES HYE DE CROM.

and markings are certainly very beautiful. The plant was exhibited without record of parentage, and we have provisionally retained the name under which it was shown, and under which it was subsequently figured (*Gard. Chron.*, 1908, i. p. 362, fig. 165), but we believe that it is a hybrid between O. × Vuylstekei and O. × ardentissimum, and thus a variety of O. × illustre. Owing to the great variability of some of these complex hybrids, and the absence of records in so many cases, it is becoming increasingly difficult to classify them correctly. It may be added that there is also an earlier O. × egregium, but we believe it to be a variety of the extremely polymorphic O. × Andersonianum.

CALENDAR OF OPERATIONS FOR JULY.

By W. J. MORGAN, Rann Lea Gardens, Rainhill, Lancs.

PHAIUS will now be growing fast, and any plants that require potting should be done as soon as the young roots commence to push from the new growth. The hybrids are much stronger growers than the species, and not quite so difficult to manage. They should be given plenty of root room, and then it will not be necessary to repot for some time. In breaking up specimen plants care must be taken not to break more roots than is required to divide the plants, as they object to much root disturbance. In repotting, use good lumps to work in between the roots, and see that the roots are not all buried at the bottom of the pot, as is often the case in potting strong rooting plants. A little care in potting makes a lot of difference in the growth made afterwards. The compost should consist of good fibrous loam, leaves, peat, and a little chopped moss, with some charcoal and sand. Mix sufficient loam in to make a rather stiff mixture. Loam varies so much that it is difficult to state the exact quantity, but with a heavy loam quite half should be used. Keep the plants well below the rim of the pot, as they like plenty of water during the growing season. The staging between the pots must be damped several times daily till they get started rooting in the new compost. As soon as they commence to grow again more air must be admitted to the house, as a damp, close atmosphere will cause spot in the leaves and disfigure the plants. A temperature of 70° will suit them to grow in.

ODONTOGLOSSUM GRANDE is a general favourite, and should be grown in every collection, especially where quantities of flowers are required for cutting. They should be growing well now, and should be examined, and those that need potting should be done when the young growth is about half made. If handled with care they will flower the same season as potted. They are not particular where they grow so long as it is an airy position, with a fair amount of sunlight, and a temperature of about 60°. This is another strong-rooting species, and the roots are also very brittle, and require great care in repotting. If the roots adhere fast to the pot they are growing in, smash the pot, and the pieces can then easily be taken away without breaking the roots. All old useless back bulbs should be taken away, leaving two or three behind the young growth, according to the strength of the plant. A compost should be used of three parts Osmunda fibre, and one part leaves, with very little moss scattered in. They should be potted firmly, and if given a good shift will not require much attention for two or three seasons, and they give finer flowers when left undisturbed. Slugs are very fond of the young growths and roots, and a sharp look out should be kept for them, as they ruin a young growth in a night. A few lettuce leaves placed between the pots and on the compost

will help to keep them off the plants, and they should be gone over after dark. More slugs can be caught in a single night than in a week of daylight, as they get out of sight as soon as day breaks, and it is a waste of time looking for them then.

ODONTOGLOSSUM CITROSMUM will now be past flowering, and any that require potting or top dressing should be done as soon as possible after flowering, as they are making growth while they are developing their spike, and flowering when they get established again. They should be suspended from the roof of the Cattleya House, as they make much harder bulbs when suspended than when stood on the stage, and the flowers are also much more effective. A mixture of Osmunda fibre, leaves, and moss, with crushed crocks, will suit them well, and they like plenty of water in the growing season.

CÆLOGYNE MASSANGEANA will also do well suspended from the roof of the Cattleya House. This species does better if grown in baskets. It is very free-flowering when well grown, and makes a pretty subject when in flower. The plants should be hung where they can be syringed, as it keeps the under side of the leaves free from red spider, otherwise it is a variety that does not seem to have many enemies. A compost similar to that used for *Odontoglossum citrosmum* will suit it. The baskets should be plunged in the tank whenever they get dry. Baskets are not like pots, as in watering them with a can most of the water runs off the surface before it has time to soak in, so that if the surface is dry the best plan is to give them a plunge in the tank, so as to make sure they get soaked in the centre as well as the outside. This I find is the one great fault of using baskets for Orchids, as the outside gets soaked while in most cases the centre will be dust dry.

CÆLOGYNE PANDURATA.—I think this is one of the most difficult Orchids we have to grow, and it is seldom seen doing well, either in trade or private establishments. Plants that have passed out of flower should be potted or top dressed, and as they make long rhizomes they should be given plenty of room for the front lead. The raft need only have enough compost placed on for present requirements, and as the leading growth pushes its new roots a little can be placed under the growth, so that the new roots will always have fresh compost to root into. Osmunda fibre and moss seems to suit them as well as anything. Pot firmly, and keep the plant level with the rim of the basket. Do not raise it higher, as the leader generally runs up from the pot or basket, and unless fresh compost is put under the young roots they die off. A shady corner in the stove will suit it, and as the leaves easily scald care must be taken to shade them properly. Syringe them several times daily, as they are very subject to attacks of red spider.

THUNIAS that have passed their flowering stage should be placed in a

sunny position to finish their growth. They will require plenty of water until the foliage commences to change colour, when the supply can be gradually lessened till they lose all their foliage, when they will require only sufficient to keep them plump during the winter. Liquid manure occasionally will help them to make up fine bulbs. Keep them well syringed to keep the foliage clean, and give them every chance to make fine bulbs, and they will well repay with fine growths and flowers next season.

SHADING.—By the end of July the shading on Cattleyas, Lælias, and Dendrobies can be lightened, and where the glass has been stippled with whitening or flour it should be washed off and the blinds only used, and the use of these should be gradually lessened, till by the middle of August they will only be needed for an hour or two in the middle of the day. With less shade the air, of course, must be increased on sunny days, and then the plants will ripen well without scalding. In ripening the plants, do not keep the atmosphere in the houses dry, or the result will be just the opposite to what is wanted. Many growers make a mistake in ripening by also shrivelling the newly finished bulbs, and then the plants are expected to flower. Much the same method should be used as in ripening fruit or colouring Crotons.

WATERING.—In the autumn the water supply should be reduced, but not withheld altogether, as is so often done. The ventilation should also be increased, but should not be left on in all weathers. The plants can be syringed, and the houses shut up in the afternoon for a few hours, air being again given in the evening in nice weather, as it saves general watering, and is much better for the plants. Picking plants out every morning is a waste of time, as nearly all the harder growing section will do with looking round for dry ones about every four or five days. In looking round daily it is always a temptation for a man to water a plant that looks a bit dry, even when it would be better left for a day or two, whereas if they are only done every four or five days there is not so much harm done in watering one that is neither wet or dry, as it has a chance to dry out by next watering day.

CYPRIPEDIUMS, PHALÆNOPSIS, and all the softer growing section, should be given every encouragement to make up their growth, as the best days will soon be past, and lost. Sunheat cannot be made up later on with fire heat. Where the glass is stippled the blinds can be left up longer in the mornings, and drawn up a little earlier in the afternoons, as the days shorten very rapidly, and the sun should be used whenever possible in preference to fire heat.

TEMPERATURES should not be allowed to drop suddenly at any time, but little or no fire heat need be used except in wet weather, and then only

enough to keep the air moving and preventing the houses from feeling chilly. Temperatures will still be out of control as far as sun heat is concerned, but it will do the plants no harm to let them run up so long as the houses are not kept stuffy. A little air put on early, and increased as the sun heat increases, will generally keep them fresh and airy.

Any plants that are at all sickly should be accommodated in a house by themselves, so that they do not interfere with ripening the healthy plants. A corner in the stove will generally bring them round again. Houses should be damped frequently to keep a nice atmosphere, and fumigated frequently to keep down the pests which growers have to contend with.

A mistake crept into my last Calendar, which I wish to correct. The sentence commencing on the last line of page 167 should have read:—“Their houses are not built on the Viaduct system; the Orchid houses are ordinary plant houses, and the Orchids do well, and the cost of such houses is about one-third the cost of Orchid houses in England.” The sentence beginning at line 12 of page 168 should have read:—“Here we use cocoanut matting for a double staging, and get our houses much better ventilated (without putting so much air on) than is possible in houses where solid stages are used, as the air and heat from the pipes can pass through the matting, and in the winter, instead of using all the heat up the back and front of the stage, and the centre of the stage cold and wet, we get an even heat through the stage, and get no rush of it anywhere.”

ORCHIDS AT RAINHILL, LANCASHIRE.

H. J. BROMILOW, Esq., having just won the “Sander” Cup for *Cypripediums* at the meetings of the Manchester and North of England Orchid Society, a few words on his collection of Orchids may not be out of place. Rainhill is not one of the easiest places to get at, but arriving at Rann Lea, Mr. Bromilow's garden, the inconvenience is soon forgotten in handling and discussing the many rare things, for Mr. Morgan, the head gardener, is an Orchid enthusiast, with that quiet but forcible enthusiasm which is at once infectious. The Rann Lea collection is of very recent growth, as about five years ago, in response to various hints from Mr. Morgan, Mr. Bromilow handed to him a modest sum of money, and told him to spend it as he liked on Orchids. Since then the collection has grown apace, and now numbers about 4,000 plants, the bulk of which are *Cypripediums* of the best varieties. Mr. Bromilow's houses are not of the best for Orchid growing, being mostly lean-to's, but as they are to be re-modelled or rebuilt in the near future, this disadvantage will soon disappear. We first came across a few *Odontoglossum crispum*, the remains of an importation, the poor varieties having been rigorously weeded out. We noted a very healthy batch of *Lælia*

anceps, of all the white varieties, L. a. Amesiana, Sanderiana, Bull's alba, &c. These had just been potted in Osmunda fibre, in fairly large pots, and were making vigorous growth. Mr. Morgan believes in plenty of pot room for almost everything, and gets good results. A fine lot of about 100 plants of *Dendrobium nobile virginale* seemed to be in the best of condition, though scarcely large enough to flower as yet. On another stage was a large group of mixed plants, including most of the ordinary varieties. Mr. Bromilow does not grow many *Lælias* or *Cattleyas*, but his small collection of these is very select, and contains many albinos of the different species, and two real gems in *Cattleya* × *Iris* var. Mrs. Bromilow and C. × I. Marjorie, both of them having received First-class Certificates.

In raising *Cypripedium* seedlings Mr. Morgan has been very successful, and there are now several hundreds in all sizes, and of one cross, namely C. insigne Harefield Hall var. × Gaston Bultel var. King Edward VII., which should be specially fine, Mr. Bromilow has got quite a nice batch of strong young plants. But though we would like to linger in this house, from which will come many fine things in the near future, as nothing but the best varieties are fertilized, we pass on to the main *Cypripedium* house, and are at once amongst all the best varieties and hybrids of this class. We noted C. × Minos Youngii, C. × Hindeanum, C. × Victory, C. × chrysotoxum var. Victor, C. × Euryades, New Hall Hey var., C. × E., Sir Trevor Lawrence's var., C. × Priam, the unique C. Charlesworthii var. Richard Moore, which is almost black on the dorsal sepal, C. × majesticum, C. × Maudiaë, C. Lawrenceanum Hyeaenum, C. callosum Sanderæ, C. × Venus, C. × Geo. Singer, C. × Beckmanii, C. × Alfred Dimmock, &c. The rare C. × Flamingo is in flower and is very beautiful, though having been recently divided probably not at its best. We also noted C. × Eson giganteum, C. × Thalia Mrs. Francis Wellesley, C. × Thalia giganteum, C. insigne Aberdeen, C. i. Monarch, and most other good varieties of C. insigne, together with the beautiful C. × Marjorie, C. × Gaston Bultel var. King Edward VII., C. × Germain Opoix, C. × aureum varieties virginale, Surprise, Hyeaenum, Edippe, &c., C. × fulshawense, C. × alportense, &c. Nearly all these plants were very fine and in splendid condition. Mr. Bromilow possesses a fine batch of C. bellatulum album, and I was fortunate enough to see in flower two unique C. bellatulum in the varieties Queen of Spain and Queen of Portugal. These have flowered from an importation, and are fairly intermediate between C. b. album and the ordinary form, yet the foliage is like neither, being distinctly striped on the underside. From whence does it acquire this striping? Mr. Bromilow may be congratulated on this acquisition. I noted a fine batch of C. Fairrieaenum, and here again Mr. Bromilow has been very fortunate, as his C. Fairrieaenum var.

Othello is undoubtedly the darkest form of this beautiful *Cypripedium* which has yet appeared, and the foliage of another, as yet unflowered, gives promise of being an albino.

In conclusion I may add that Mr. Bromilow has quite a nice collection of paintings, and does not confine himself to one artist, often having the same flower painted by two different artists; but as time was pressing these could only be hurriedly glanced through, but I was satisfied that they were true to nature, as I had seen all or nearly all in flower in the many beautiful groups Mr. Bromilow had staged at the Manchester Orchid meetings. Mr. Bromilow possesses a splendid nucleus for a fine collection, which I trust may continue to grow in size, as it will in vigour, under the care and skill of the able head gardener, Mr. Morgan. It may be added that since October last, Mr. Bromilow has gained eight First-class Certificates and about eighteen Awards of Merit at Manchester.

H. THORP.

ORCHIDS: THEIR STRUCTURE, DEVELOPMENT, AND FERTILISATION.

Notes of a lecture given at a meeting of the Kew Gardeners' Mutual Improvement Society, held on February 17th, 1908, by Mr. R. A. Rolfe, A.L.S., and illustrated with lantern slides.

(Concluded from page 134.)

WE may now consider a few cases of special complexity in the flowers, or reproductive organs, and may first take *Bulbophyllum barbigerum* (thrown on screen). The flower is that of a typical *Bulbophyllum*, having the lip very delicately balanced on a kind of pivot, so as to rock backwards and forwards directly the balance is upset by some insect alighting on it, but there is the further complication that its margin is extended into a series of very long, slender hairs, each terminating in a club-shaped appendage. The effect of this is that under the slightest breeze the lip is constantly oscillating up and down, which would serve to catch the eye of the fertilising insect. There are several other species in which the same phenomenon is present to a smaller extent, and one can imagine how such an arrangement has gradually been evolved, but the presence of the insect is required to enable us to understand fully all that goes on, and unfortunately we cannot see the plant in its native surroundings.

In the case of the *Bulbophyllum* the lip is merely mobile, but there are cases where the lip is actually sensitive to the touch, as in the case of *Masdevallia muscosa*, which we are unable to show. At a certain time in the morning the lip gradually opens, by turning outward on its axis, thus exposing a small tubercle which is situated on the disc. This tubercle is the sensitive part, and if an insect alights on it (or it is touched by any

similar object), it immediately begins to close up, gently at first, but afterwards quickly, ultimately closing almost with a snap. There is then only a small opening, immediately in front of the anther, through which the insect can escape, and in so doing it would bring away the pollinia, and when the process was repeated on another flower, the pollinia would be left on the stigma. The lip closes up naturally at night, so as to protect the pollinia when the proper insects are not on the wing. It should also be added that the peduncle is protected all over by bristles (hence the name *muscosa*), which prevents useless insects from climbing up to the flower some other way.

In the large Australian terrestrial genus *Pterostylis* the lip is also sensitive, and the details have been described by Fitzgerald. In *P. longifolia* the lip is flattish and very hairy, and is attached at the base by a short band in front of the column, enabling it to reflex on to the lateral sepals, but on the slightest touch it springs up and continues to close the flower from half an hour to an hour and a half, according to the state of the plant and of the weather. It then drops down again, taking from one to five minutes to descend spasmodically, when after about one minute it regains its sensitiveness. Coming to the conclusion that the flowers were fertilised by small insects, Fitzgerald procured a few small beetles, and carefully dropped one of them on to the lip, when it was instantly carried into the flower, and its efforts to escape were anxiously watched for a quarter of an hour, when it managed to get out by creeping past the anther. It was then captured, and two of the pollen masses were found attached to it. The insect was then dropped into a flower of *Pterostylis obtusa* from which the pollinia had been removed, and a full capsule of hybrid seed was the result. If the plants are kept under a bell glass, no seed is ever produced. Small dipterous flies, however, he thinks are the natural fertilising agents, as they are frequently found in the flowers of this genus, attached to the rostellum or to the stigma, from which they have been unable to free themselves. And spiders seem to be aware of the fact, for he remarks that on one occasion he had the good fortune to find a fly caught in a spider's web which had been spread over a group of *P. obtusa*, and to the head of this little fly pollen masses of a *Pterostylis* were firmly adhering. The genus contains upwards of forty species, and exhibits great variation, and various degrees of sensitiveness, and in two or three cases the lip does not jump up when touched.

A reception of another kind is provided for the fertilising insect in the case of the Tropical American genus *Coryanthes* (*C. macrantha* was now thrown on the screen), for they are precipitated into a kind of cold bath, from which they can only escape by crawling through a small opening, which, as in the preceding case, results in the fertilisation of the flower.

The whole organisation is remarkably complex, and at first sight it is difficult to say what some of the parts really represent. The sepals and petals are very membranous, and more or less rolled up and reflexed, while the lip is very fleshy, bucket-shaped, and suspended from a stout horizontal arm, and at the junction of the two is situated a fleshy cap or helmet, from which the genus takes its name, literally, "helmet-flower." The column descends on one side of the bucket, and at its junction with the horizontal arm are situated a pair of horn-like glands, from which as soon as the flower opens, a watery fluid begins to exude, and falls drop by drop into the bucket beneath. At this time the flower exhales a strong perfume, which serves to attract a beautiful metallic-green bee, sometimes in considerable numbers. These bees alight on the fleshy part of the flower and sides of the bucket, but soon fall into the liquid beneath. They swim round and round and struggle in vain to climb up its slippery sides, until one of them sees the narrow opening at the side opposite to the column, and makes its exit there, and in crawling out brings the pollinia away firmly attached to its back. Undeterred by its involuntary bath, it flies off to another flower, where the process is repeated, but on again coming out it has to pass the stigma, which captures the pollinia, and fertilisation follows. The whole thing sounds rather like romance, but it is a well authenticated fact, which has been verified many times, and may be seen regularly whenever the plants flower in their native homes. It is only the absence of the proper bee which prevents the spectacle from being seen in our houses at home, for the water collects in the bucket, just as in the wild state, and I have more than once watched the process. The really remarkable thing is that the plant should make such elaborate preparation to secure fertilisation of the flowers. There are about a dozen distinct species of the genus.

Specialisation of another kind takes place in *Catasetum* and the allied genus *Cynoches*, in the separation of the sexes into male and female flowers, and in a very elaborate arrangement for the transport of the pollen in the male flowers. Darwin thought there was a third or neutral sex, but this I have shown to be erroneous (*Journ. Linn. Soc.* xxvi. p. 206). The two kinds of flowers are sometimes borne on the same plant, and occasionally on the same inflorescence. The female flowers have a galeate or hood-shaped lip, which is uppermost, a stout ovary, a short stout column, on which is situated the stigma, but no anther or only a rudimentary one. The females, so far as known, do not show much diversity, except in size. On the contrary, the males of the different species, show great differences, especially in the shape, position, and details of the lip, and in a good many species only this sex is known. They agree in having a longer, more slender column, with the anther alone developed (both ovary and stigma being undeveloped), while in many cases the rostellum grows out into a pair

of sensitive arms, often called the antennæ, which stand out from the face of the column, and inside or in front of the lip, and act as a kind of trigger for liberating the pollinia. When an insect alights on the lip, and touches the antennæ the pollinia are thrown out suddenly, and lodge on the head or back of the insect, and if it should then visit a female flower the pollinia would be captured by the viscid stigma, and the production of a capsule of seed would be the result. The flowers exhale a strong perfume, which invariably attracts the bees, without whose aid they would remain unfertilised. About fifty species are known, and in some cases the flowers are dissimilar in colour in the two sexes.

The genus *Cycnoches* shows a somewhat parallel condition of things, though the details are very different. In *C. Warscewiczii* (a plant showing an inflorescence of each sex on the same pseudobulb was now thrown on the screen), the flowers of both sexes are green, but the males are borne in a long pendulous raceme, and are small, with rather membranous sepals and petals, and the lip reduced to a small circular disc with radiating teeth round the margin. The ovary is undeveloped, and the column is long, slender and curved, and the anther present, but not the stigma or column wings. It is from the character of the male column that the genus takes its name—literally “swan’s neck.” The females are borne in a short raceme or cluster, are large, few in number, with very fleshy sepals and petals, while the lip is also large and very fleshy. The ovary is stout, and the column short and stout, with the stigma well developed, and a pair of fleshy column wings, but the anther suppressed or only rudimentary. In the case of the allied *C. Egertonianum* the female flowers are green, but the males dark purple. This is the species which created such excitement many years ago, and which is depicted in the last plate of Mr. Bateman’s big book (*Orch. Mex. and Guat.*), which is remarkable for showing the males of two different species on the same pseudobulb. The phenomenon was not understood for many years, but when the mystery about *Catasetum* was cleared up, and it was realised that the different kinds of flowers of *Cycnoches* also represented sexual differences, the anomalous character of this plate became apparent, and this led to the discovery that the green flowers depicted had been restored from shrivelled females of *C. Egertonianum*, evidently with the help of an earlier plate representing the male flowers of *C. ventricosum*. It is curious that the two species even belong to distinct sections of the genus. [A photographic illustration of this plate, and the history of the question were given at pp. 337-340 of the last volume of this work]. It would be interesting to trace the successive steps to which such extreme floral diversity between the sexes has been attained, but it is a very significant fact that it does not apply to the whole genus. In *C. ventricosum*, the original *C. Loddigesii*, the well-known *C. chlorochilum*, and two or

three others the sexes are much alike in size and shape, but in the rest of the species the remarkable diversity just pointed out is seen, the lip in the two sexes being very different in shape, the males much smaller than the females, and the perianth always membranous. Here we reach the culminating point of development among the Orchidaceæ in this direction.

All these, and numerous other remarkable developments of floral structure are adaptations to secure the visits of useful insects, for purposes of cross fertilisation, or to exclude others who would only plunder the flowers without effecting this, and if we would understand the reasons why such complex means have been adopted to secure such an apparently simple end, we can find an answer in the beneficial effects of cross fertilisation. Continued self fertilisation is well known to be injurious, and all these elaborate means to prevent it have gradually arisen according to the necessities of the case. Any adaptation which served to increase fertility would tend to be preserved and perpetuated, while variations in the contrary direction would be eliminated in the struggle for existence. The process is known under the expressive term "natural selection," and under its agency has arisen those distinct races known to us as "species," and I think we must all admit that the origin of species—at all events among Orchids—is a very fascinating study.

ORCHIDS AT KEW.

A NUMBER of rare and interesting Orchids are in flower in the Kew collection. In one of the houses may be seen a good plant of *Acineta Humboldtii*, the handsome *Scuticaria Steelii*, *Stanhopea guttulata*, some fine *Thunias*, including the richly-coloured *T. Winniana*, a fine plant of *Cirrhopetalum robustum*, *Ansellia gigantea*, *Oncidium Lanceanum*, *Phaius* × *Phoebe*, *Brassavola Digbyana*, *Eulophia euglossa*, *Epidendrum fragrans*, *Liparis odorata*, *elata* and *guineensis*, *Nephelaphyllum pulchrum* and *cristatum*, *Polystachya leonensis*, *laxiflora* and *bicolor*, and other botanical Orchids.

In the adjacent *Cattleya* house is a fine *Epidendrum cochleatum*, the striking *E. trachychilum*, *E. pentotis*, *E. variegatum*, *E.* × *O'Brienianum*, with its two parents, *E. radicans* and *E. evectum*, the brilliant *E. vitellinum*, a fine plant of *Stanhopea tigrina*, the rare *Gongora gratulabunda*, *Sobralia Amesiana* and *macrantha*, *Oncidium maizæfolium*, *unicorne*, *sarcodes*, *Wentworthianum* and *graminifolium*, with other interesting things.

The Cool house is gay with numerous *Odontoglossum crispum*, examples of *O. Pescatorei*, *triumphans*, *gloriosum*, *grande*, *Uroskinneri*, *Harryanum*, *luteopurpureum*, *sceptrum*, *Lindleyanum*, × *crispo-Harryanum*, and several others, together with *Oncidium serratum*, *macranthum*, and *candidum*, *Miltonia vexillaria* and *M.* × *St. Andre*, *Cochlioda Noëtzliana*, a very fine

plant of *Lycaste Deppei*, the rare *L. Dyeriana*, with the habit of *Cattleya citrina* and light green flowers, *Cymbidium Lowianum*, *Disa* × *Veitchii* and × *langleyensis*, *Lissochilus Krebsii*, species of *Pleurothallis*, *Phrysosiphon Loddigesii*, *Theodorea gomezoides*, *Stelis omalosantha*, *Masdevallia muscosa*, *calura*, *Carderi*, a well-bloomed plant of *M. Rolfeana*, and numerous others.

In the adjacent Warm house is a good plant of the striking *Bulbophyllum virescens*, with the feathery-lipped *B. barbigerum*, some good *Paphiopedulum Curtisii*, *ciliolare*, *glaucophyllum*, *Victoria-Mariæ*, *nigrum*, *Aërides odoratum*, *A. falcatum* var. *Leonæ*, *Vanda tricolor* and *suavis*, &c.

In the Rockery outside is a fine clump of the North American *Epipactis gigantea*, with over forty spikes of flowers, which are brownish-green, striped with red on the basal half of the lip, and with a zone of orange on the front lobe. A fine clump of *Orchis foliosa* is flowering in the bog near the dripping well, and not far away are some plants of *Listera ovata*, while a fine dark form of *Orchis latifolia*, with green leaves, is just passing out of bloom, also a very fine clump of *Orchis latifolia* × *maculata*, with handsomely spotted leaves, and about twenty spikes of flowers.



ODONTOGLOSSUM CRISPUM.—The question is again asked whether the so-called blotched forms of *Odontoglossum crispum* are varieties of that species or hybrids of complex parentage. It has long been believed that some at least of them belong to the latter class, but it is very difficult to say where variation proper stops and hybridisation begins, especially in view of what is now known about reversion. Experimental evidence is wanted on the question. In view of the known facts of reversion it would be well worth while to carefully self-fertilise some well-known heavily blotched variety, and thus raise a batch of self-fertilised seedlings, to see how far the variety keeps constant, and how far it reverts to earlier forms. The experiment would be well worth making from a purely horticultural standpoint, for it would be just as likely to produce forms of merit as would the crossing of blotched forms with each other, besides throwing an important light on an interesting horticultural question. Which of our hybridists will immortalise himself by making the experiment? Another experiment which would be well worth making would be to fertilise some good typical unspotted form of *O. crispum* with a good *O.* × *Wilckeanum* of known origin, one of the fine forms which have been raised artificially between *O. crispum* and *O. luteopurpureum*, carefully noting the result as the seedlings flowered. This also would be well worth doing from a purely horticultural standpoint, for it should produce some spotted forms of good quality, whether they matched wild forms or not. Some of our hybridists should take the hint.

MALFORMED ORCHIDS.

THE report of the R.H.S. Scientific Committee for June 9th contains the following note :—

MALFORMED ORCHIDS.—Mr. W. C. Worsdell reported that he had examined a specimen of *Cattleya intermedia* referred to him, in which three flowers had become fused together so that there were eighteen perianth pieces in the resulting fasciated specimen and three properly formed columns. The ovaries, however, were completely absent. Mr. Gurney Wilson, of Hayward's Heath, Sussex, sent flowers of *Odontoglossum crispum*, which were referred to Mr. Worsdell.

The Report of the meeting of June 23rd contains the following references to Orchids :—

MALFORMED ODONTOGLOSSUMS.—Mr. Worsdell reported that one of the flowers of *Odontoglossum crispum* received from G. Wilson, Esq., of Hayward's Heath, had the three stamens of the outer whorl all developed, instead of only one as usual. The second flower had a normal column and normal sepals, but each of the three petals had become partly modified into stamens and bore anthers.

MILTONIA VEXILLARIA.—Baron Sir Henry Schröder sent a spike of *Miltonia vexillaria* with normal flowers, and another with partially double flowers, which was borne upon a plant divided from the former a few years ago. The parent has always (for over twenty years) borne normal flowers, while each year since its separation the offset had produced semi-double flowers.



CATASETUM DISCOLOR.

THE *Gardeners' Chronicle* for June 6th (p. 362) records a very interesting case of the occurrence of *Catasetum discolor* with male and female flowers, as follows: "A stout inflorescence of *Catasetum discolor*, bearing three female flowers on one side and three male flowers on the other, is sent by Mr. G. Reynolds, gardener to Leopold de Rothschild, Esq., Gunnersbury Park, Acton, who states that another spike, bearing male flowers only, was also produced. On the inflorescence sent the male flowers are greenish, changing to yellow, the shallow galeate labellum being furnished with purplish filaments, arranged moustache-like on either side. The female flowers are about two inches in length from the top of the upper sepal to the base of the deep pot-like fleshy labellum, and about twice the size of the male blooms. Both are similar in colour, but in the female flowers the fringe on the sides is reduced to a slightly fringed serration on the margin. In both sexes of flowers the labellum is uppermost. Since *Catasetum discolor* belongs to the section in which the rostellum of the male is not prolonged

into antennæ, serving the purpose of bringing about the ejection of the pollinia when they are touched, the columns of both sexes resemble each other. In the female, however, it is much the stouter, the ovary also being proportionately thick."

ORCHIDS IN SEASON.

WE have received from the collection of G. Hamilton Smith, Esq., of Finchley (gr. Mr. Coningsby), the three-flowered inflorescence of the beautiful *Lælia* × *Pacavia* var. Mrs. G. Hamilton Smith, which was exhibited at the meeting of the R. H. S. on June 23rd last. It is a fine form, with bright rosy lilac sepals and petals, and the lip beautifully veined with claret purple. A fine, richly coloured form of *Cattleya Warscewiczii* is also sent.

Several beautiful flowers are sent from the collection of H. S. Goodson, Esq., Fairlawn, Putney, by Mr. Day. *Odontoglossum crispum* Mrs. Humphrey is a good form, with clear white ground, well-toothed petals, and reddish brown blotches on all the segments. *O. c.* Rossendale is somewhat similar in general character, but the blotches are more cinnamon-brown in colour. There are also good forms of *O. × altum*, *O. × percultum* and *O. × eximium* Goodson's var., with *Cattleya Mossiæ*, var. Mrs. A. Goodson, which received an Award of Merit from the R. H. S. in June, 1906.

Three flowers of *Odontoglossum × Rolfeæ* are sent from the collection of R. G. Thwaites, Esq., of Streatham (gr. Mr. Black). They are from small seedlings now flowering for the first time, and one of them is particularly good in colour. A good dark form of *O. × Othello* is also sent.

Several interesting and beautiful *Odontoglossums* are sent from the collection of De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables). There is a flower of *O. × Coradinei rosefieldense*, and two seedlings raised from it crossed with a good unspotted *O. crispum*. One has a white ground, and is the one figured at page 241 of our thirteenth volume, but it is now greatly improved, being over 2 $\frac{3}{4}$ inches in diameter across the petals. The other has a light yellow ground, but is said to have been out three weeks, and to be much faded. It is still larger, the flower being 3 $\frac{1}{2}$ inches across, and the petals 1 $\frac{1}{4}$ inches broad. The sepals and one petal have each a large roundish red-brown blotch, while the other petal has a few smaller spots. Flowers are also enclosed of *O. × Persephone* (*Pescatorei* × *Adrianæ*), a light yellow flower regularly spotted with dark brown, and *O. × Tristam* (*triumphans* × *crispo-Harryanum*), the latter a large dark form most like *O. triumphans* in shape, with the *Harryanum* crest and markings well developed.

A very fine form of *Lælia grandiflora* (*majalis*) is sent from the collection of A. E. Wilson Browne, Esq., of Sutton Coldfield, which has appeared on

an imported plant, together with a good white form of *Cattleya Mossiæ*, and a flower of *Cypripedium bellatulum*, also recently imported.

A flower of the beautiful *Cattleya Mendelii* var. *Princess*, which has just received a Certificate of Merit at Brussels, is sent by Messrs. Hugh Low & Co., Enfield. It is a fine white form, with a little rosy stain on the front of the lip. A good typical form is said to have been found in the same clump.

A very pretty form of *Odontoglossum* × *Adrianæ* is sent by Mr. C. T. Cooper, of Coventry. It has a clear white ground, very regularly blotched with red-brown, and is very attractive.

NOTES.

THE dates of the July meetings of the Royal Horticultural Society are as follows: July 7th and 8th, Great Summer Show, at Holland House, Kensington, by kind permission of the Countess of Ilchester. The Orchid Committee meets at 10.30 a.m. Silver Cups and Medals will be awarded as usual, according to merit. July 21st, ordinary fortnightly meeting at the Royal Horticultural Hall, Vincent Square, Westminster. The Orchid Committee will meet at the usual hour, 12 o'clock noon. The following meeting will be held on August 4th.

The Manchester and North of England Orchid Society will hold a meeting at the Coal Exchange, Manchester, on July 23rd. The Committee meets at noon, and the exhibits are open to inspection from 1 to 4 p.m. The programme for the year shows that some valuable prizes are offered, which is likely to lead to a keen competition. The details have already been given.

We have received from the Publishers of the *Gardeners' Chronicle* copies of the four fine sheets of Orchid engravings which were exhibited at the recent Ghent Show, and to which a Silver-gilt Medal was awarded. One of them is devoted to Hybrid *Odontoglossums*, one to varieties of *O. crispum*, and two to Hybrid *Cypripediums*. The figures are partly from photographs and partly from drawings, and all have previously appeared in the pages of the work.

ORCHID PORTRAITS.

BULBOPHYLLUM FASCINATOR, Rolfe.—*Bot. Mag.*, t. 8199.

BULBOPHYLLUM ORTHOGLOSSUM, Kränzl.—*Gard. Chron.*, 1908, i. p. 406, fig. 182.

CATTLEYA MENDELII, var. *HIS MAJESTY THE KING*.—*Gard. Mag.*, 1908, pp. 476, 477, with fig.

CATTLEYA MENDELII, var. *QUEEN ALEXANDRA*.—*Journ. Hort.*, 1908, i. p. 535, with fig.; *Garden*, 1908, i. p. 312, with fig.

CYPRIPEDIUM X GIGAS, CORNDEAN HALL VAR.—*Orchis*, ii. t. 17.

CYPRIPEDIUM LAWRENCEANUM HYEANUM.—*Journ. Hort.*, 1908, i. p. 559, with fig.

CYPRIPEDIUM VENTRICOSUM VAR. ALBA.—*Gard. Chron.*, 1908, i. p. 414, fig. 183. This is *C. macranthum album*.

DENDROBIUM NOBILE (specimen plant).—*Journ. Hort.* 1908, i. p. 511, with fig.

DENDROBIUM THYRSIFLORUM.—*Garden*, 1908, i. p. 287, with fig.

DENDROBIUM X VENUS GRANDIFLORUM.—*Gard. Mag.*, 1908, p. 459, with fig.

ODONTIODA CHARLESWORTHII.—*Journ. Hort.*, 1908, i. p. 583, with fig.; *Gard. Mag.*, 1908, pp. 439, 456, with fig.

ODONTOGLOSSUM X ARDENTISSIMUM VAR. MADAME VUYLSTEKE.—*Gard. Chron.*, 1908, i. pp. 362, 363, fig. 166.

ODONTOGLOSSUM CRISPUM VAR. LEONARD PERFECT.—*Garden*, 1908, i. p. 288, with fig.

ODONTOGLOSSUM X EGREGIUM VAR. MADAME JULES HYE DE CROM.—*Gard. Chron.*, 1908, i. p. 362, fig. 165.

ODONTOGLOSSUM X MACULATISSIMUM.—*Gard. Chron.*, 1908, i. p. 362, fig. 164.

ODONTOGLOSSUM X PERCULTUM VAR. J. R. ROBERTS.—*Gard. Chron.*, 1908, i. p. 395, fig. 177.

ODONTOGLOSSUM X PHŒBE.—*Gard. Chron.*, 1908, i. pp. 390, 421, fig. 188.

ODONTOGLOSSUM X QUEEN ALEXANDRA, VAR. CRAWSHAYANUM.—*Gard. Mag.*, 1908, p. 476, with fig.



ANSWERS TO CORRESPONDENTS.

[Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An ADDRESSED postcard must be sent if a reply by post is desired (abroad, reply postcards should be used). Subjects of special interest will be dealt with in the body of the work].

G. E. D. The two forms must be classed under *Odontoglossum crispum*, and are presumably from imported plants, but whether they are distinct from all those which have previously been named—and we are told that they already number over a thousand—is more than we can say. We regard these multitudinous forms as named individuals, rather than varieties.

H. G. 1 and 2 are *Lycaste consobrina*; 3 and 4 are *L. aromatica*. *L. crinita* has a hairy lip, and *L. leucantha* has green sepals, and white petals and lip. The other flowers are *Pleurothallis puberula*, *Catasetum Trulla*, and apparently a small form of *Oncidium Gravesianum*.

A. E. W. B. It will be very interesting to hear if the capsule of *Cattleya citrina* crossed with *Chysis bractescens* contains good seed. One would scarcely expect to get a true hybrid from such a cross, and a similar remark would apply to *Cymbidium Lowianum* X *Chysis bractescens*, and the reverse cross. We hope to hear the result.

E. D. Photographs &c. duly received, with thanks. We will try to report on them later.

J. D. Both are good forms of *Cattleya Mendelii*, and the light one very pretty. The species varies considerably.

M. J. *Phaius bicolor* is correct.

T. P. and others. The index is partly in type, and we shall report shortly. Some notes are unavoidably postponed until our next issue.

Photographs received, with thanks. Ch. V.

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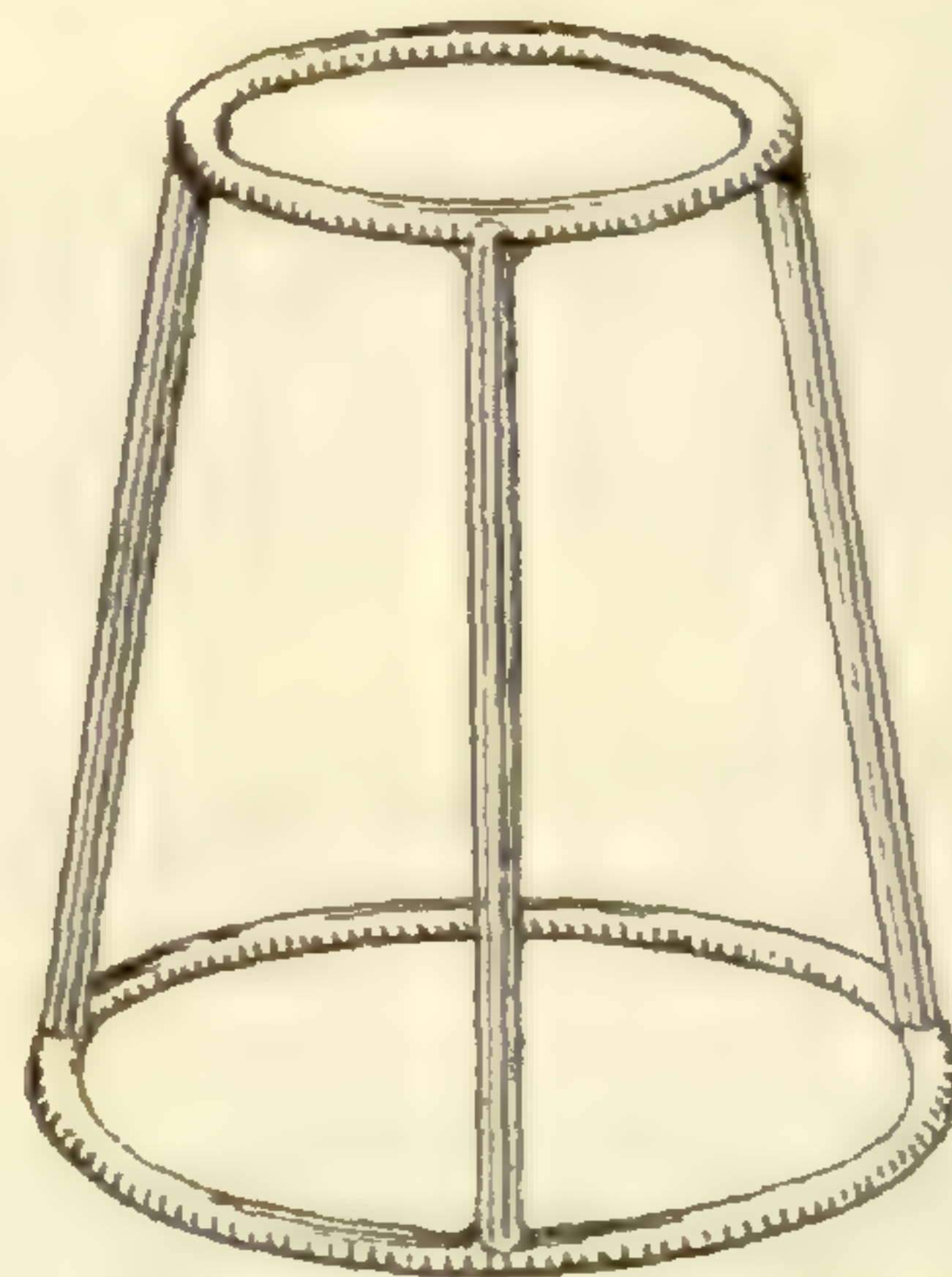
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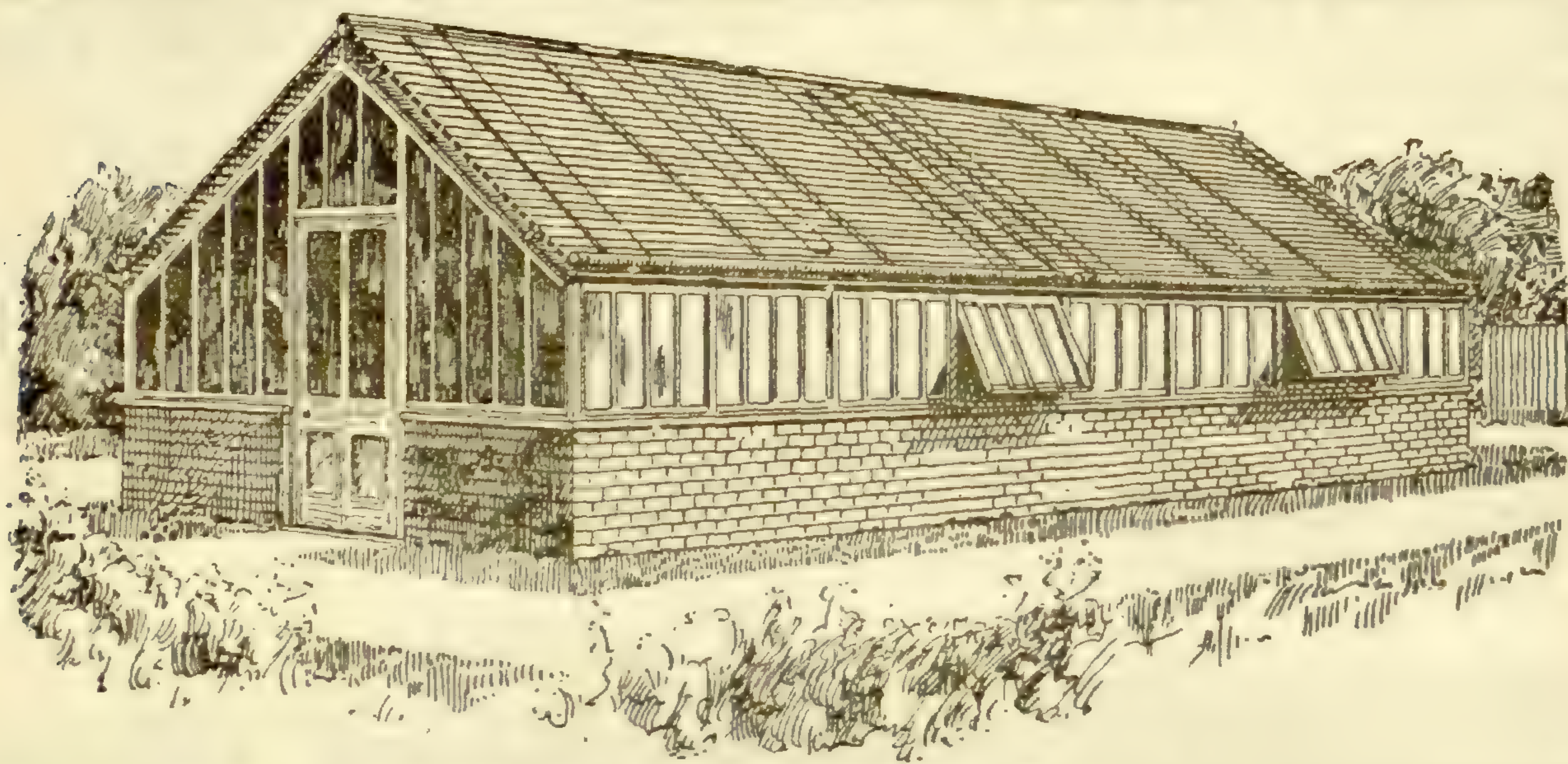
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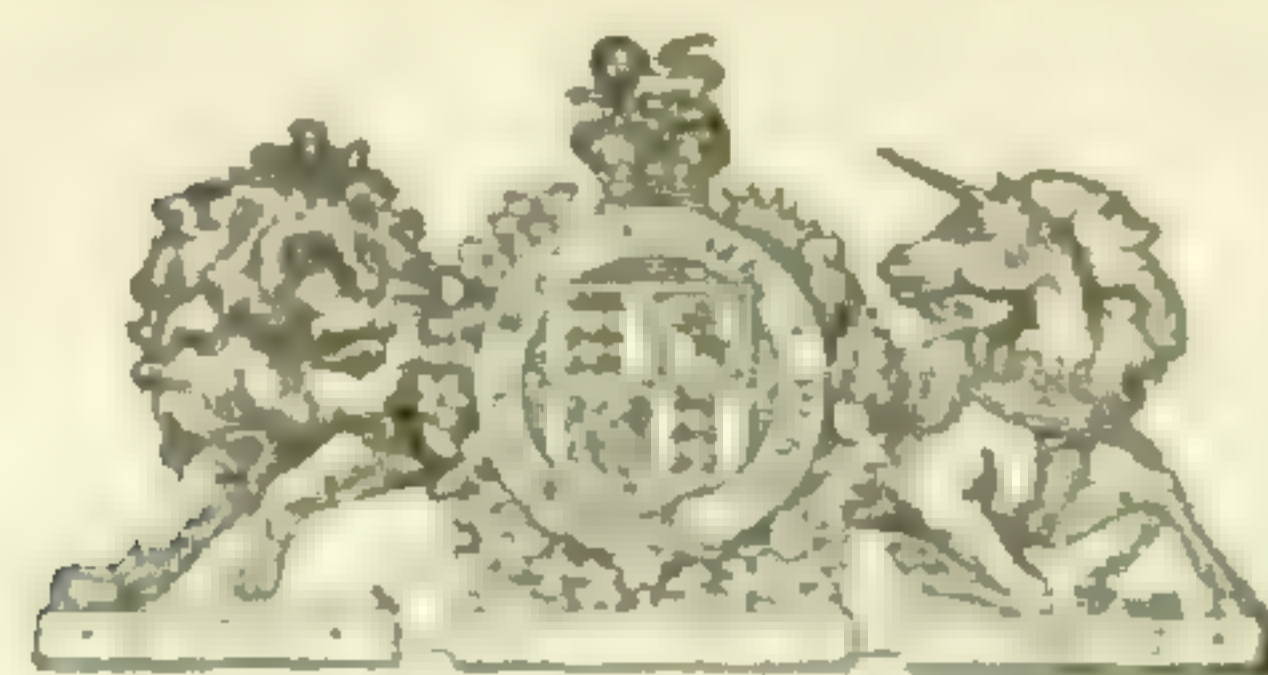
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Contents.

	PAGE		PAGE
Albinism in Orchids, Inheritance of	... 228	Notes	... 255
Answers to Correspondents	... 256	Odontoglossum crispum, Queen of the	
Bletia coccinea	... 248	Earth (fig. 28, 29)	232-233
Calendar of Operations for August	... 234	Orchid Portraits	... 256
Catasetum spinosum	... 252	Orchid seedlings	... 230
Cattleya × O'Brieniana	... 231	Orchids in season	... 254
Darwin-Wallace Jubilee Celebration	... 225	Orchids, Lesser known	... 227
Dendrobium criniferum	... 254	Societies	... 242
Epidendrum costatum	... 251	Royal Horticultural	... 242
Hybridist	... 247	Sophronitis grandiflora	... 230
Lælia × Rogersii	... 248	Spathoglottis × Colmanii and its parents	241
Odontioda Thwaitesii	... 247	S. aurea, Gatton Park var. (fig. 31)	241-242
Masdevallia coccinea	... 253	S. × aureo-Vieillardii (fig. 30)	241-242
Masdevallia towarensis	... 240	S. × Colmanii (fig. 32)	... 241
Miltonia Roezlii (fig. 33)	... 249		

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THE ORCHID REVIEW.

VOL. XVI.]

AUGUST, 1908.

[No. 188.]

THE DARWIN-WALLACE JUBILEE CELEBRATION.

ON July 1st, 1858, an epoch-making essay entitled "On the tendency of Species to form Varieties, and on the Perpetuation of Varieties and Species by Natural Means of Selection," by Charles Robert Darwin and Alfred Russell Wallace, was read at a meeting of the Linnean Society. It preceded the publication of the classical "Origin of Species" by about sixteen months. The result has been to revolutionise every branch of Natural History, and the Linnean Society decided to celebrate the fiftieth anniversary by the holding of a special session, and the issue of a commemorative volume. No apology is necessary for alluding to the subject here, for the Orchid family was one with which Darwin worked very largely, and his "Fertilisation of Orchids by Insects," published in 1862, contained a mass of details for which, as he explained, he had not space in his earlier work.

The Jubilee celebration took the form of a special afternoon meeting, which was held at the Institution of Civil Engineers, Westminster, and an evening conversazione and reception at Burlington House, and at the latter Orchids were well represented. The commemorative volume, which is to contain an account of the proceedings at the original meeting and at the Jubilee celebration, will be awaited with interest.

The proceedings at the afternoon meeting were opened by the President, Dr. D. H. Scott, F.R.S., who explained the objects of the meeting and welcomed the delegates in a brief speech. The Darwin-Wallace Medal, struck to commemorate the event, and containing a portrait of Darwin on one side and of Wallace on the reverse, was then presented to the surviving author, Dr. Alfred Russell Wallace, this being in gold, while the same in silver was given to Sir J. D. Hooker, Prof. E. Haeckel, Prof. E. Strasburger, Prof. A. Weismann, Dr. Francis Galton, and Sir E. Ray Lancaster, the claims of each recipient to the distinction being set forth, and received by the audience with enthusiasm. Dr. Wallace, in replying, spoke of the relations between Darwin and himself, remarking that the idea of the origin of species by natural selection occurred to Darwin some twenty years earlier than to himself, and also explained the circumstances which led them to the same solution of the problem independently. In early life both were ardent

beetle hunters, with a passion for collecting, and thus took an intense interest in the mere variety of living things. Then both became travellers, observers, and collectors in some of the richest and most interesting portions of the globe, and were impressed with the strange phenomena of local and geographical distribution, and the numerous problems to which they give rise. Then at the critical period, when their minds were freshly stored with information, came the views of Malthus in his essay on population; the effect of all which was analagous to that of friction upon the specially prepared match, producing that flash of insight which led immediately to the simple but universal law of the "survival of the fittest" as the long-sought effective cause of the continuous modification and adaptation of all living things.

Sir Joseph Hooker in his address dwelt upon the conditions which determined Darwin to agree to the proposal of his friends to the publication of a joint essay, how the paper was read by the Secretary of the Society, and that Sir Charles Lyell and Dr. Hooker said a few words to emphasise the importance of the event, but although intense interest was excited no discussion took place—"the subject was too novel and too ominous for the old school to enter the lists before armouring."

Professor Haeckel and Professor Weismann were unable to be present, but other recipients of the medal spoke, Sir E. Ray Lancaster concluding his remarks by saying that "at the present day not only do the main lines of the theory of Darwin and Wallace remain unchanged, but the more it is challenged by new suggestions and new hypotheses, the more brilliantly does the novelty, the importance, and the permanent value of the work of these great men commemorated by us shine forth as the one great and epoch-making effort of human thought on the subject."

Lord Avebury, who gave the concluding speech of the afternoon, spoke of his intimacy with Darwin, and the amiable character and quiet life of the renowned philosopher, and told an amusing story of one of Darwin's gardeners, who thought it was such a pity that his master had not something to occupy him, for he wandered about the garden doing nothing, and would stand for as much as ten minutes at a time gazing at a flower.

The meeting was followed by a dinner at Prince's Restaurant, and a conversazione and reception at Burlington House in the evening, when there was an extensive display of natural history objects, including many Lepidoptera from the Hope Collection, Oxford, and other sources, to show mimicry, variation, and protective resemblance.

The only Orchidaceous exhibit was a very interesting group of "*Odontoglossum crispum* with its varieties and hybrids," exhibited (by permission of the Director of the Royal Botanic Gardens, Kew) by Mr. R. Allen Rolfe, A.L.S. It comprised a series of dried specimens and drawings, with several

living plants and flowers, and was arranged to show the geographical distribution of *O. crispum*, its range of variation, the species with which it grows intermixed, and the natural hybrids which have been found in importations of it. Numerous examples were shown in illustration of the fact that in what may be called the Pacho and Velez districts *O. crispum* was remarkably variable, and included a large and varied series of blotched varieties, while in the Popayan district, where the variety *Lehmanni* grows, very little variation occurred, and there was an absence of the blotched varieties found in the other districts. The latter was illustrated by two sheets of specimens selected by the late Consul Lehmann, and the two former by a series of dried specimens and numerous coloured plates from M. Goossen's *Dictionnaire des Orchidées*. Next came the five species which are known to grow in company with *O. crispum*, namely, *O. gloriosum*, *O. Lindleyanum*, *O. luteopurpureum*, *O. Hunnewellianum*, and *O. triumphans*, the two latter in the Velez district only, all of which were known to hybridise with *O. crispum*, followed by the respective natural hybrids (in the same order), *O. × Andersonianum*, **O. × Coradinei*, **O. × Wilckeanum*, **O. × Adrianæ*, and **O. × harvengtense* (*loochristiense*). Then came the four known combinations between these other species, namely, *O. × mulus* (*gloriosum × luteopurpureum*), *O. × acuminatissimum* (*Lindleyanum × luteopurpureum*), *O. × prævisum* (*gloriosum × Lindleyanum*), and *O. × Hudsoni* (*gloriosum × Hunnewellianum*). Lastly came five artificial hybrids of *O. crispum*, namely, *O. × armainvillierense* (with *O. nobile*), *O. × crispo-Harryanum* (with *O. Harryanum*), *O. × Lambeauianum* (with *O. × Rolfeæ*), *O. × Thompsonianum* (with *O. Edwardii*), and *Odontioda Bradshawiana* (with *Cochlioda Noëtzliana*), to show the intermediate nature of the hybrids, and the way the characters of the parent species were combined. The living plants exhibited were *O. crispum*, *O. Lindleyanum*, *O. luteopurpureum*, *O. Hunnewellianum*, *O. triumphans*, *O. nobile*, and *O. × harvengtense*, and there were cut flowers of *O. × Wilckeanum*, *O. × Adrianæ*, and *O. × armainvillierense*.

In a short paper accompanying the exhibit attention was called to the fact that *O. crispum* has been artificially crossed with three of its hybrids, yielding the secondary hybrids *O. × Fascinator* (with *O. × Adrianæ*), *O. × crispodinei* (with *O. × Coradinei*), and *O. × Stewartianum* (with *O. × Andersonianum*), some, at least, of which can be fairly matched among wild plants that were formerly considered as blotched forms of *O. crispum*. The remarkable variability of *O. × Fascinator* was also pointed out, and this was held to confirm an opinion long ago expressed that many of the so-called "blotched crispums" were not simple varieties of that species, but hybrids of secondary or of more complex parentage, due to the fact that

*An asterisk indicates wild hybrids that have also been raised in gardens.

the species which grow intermixed are cross-fertilised by insects, and that the hybrids are completely fertile. Approximately parallel cases were now known among artificial hybrids, particularly of *O. Harryanum*. The absence of similar variation where *O. crispum* was found by itself might be taken as to a certain extent confirmatory evidence. Natural hybrids were found in several other regions, and our knowledge of them was almost entirely due to the popularity of the species with which they are found as garden plants, and the numbers in which the latter are imported, this applying with special force to the popular *O. crispum*. Without such popularity our knowledge of the subject would have been practically nil. It was believed that the facts could be paralleled in the genera *Salix*, *Rosa*, *Rubus*, and various others, if their history could be investigated in the same way.

The subject was worthy of increased attention, for it was admitted that crossing increases variability, and variation is the material on which natural selection works. Many hybrids were completely fertile, and spontaneous hybrids often possessed such distinctive features as to have been described as new species or as varieties of one or the other parent. Their permanence was a matter for further study and experiment. Crossing might lead to or hasten the appearance of distinct races, for there were many races of "florist's flowers" and other garden plants which were known to be of mixed origin. Thus hybridisation was a question of great biological importance, and one which had to be taken into account in discussing the very origin of species, indeed it was probably of more importance than had yet been realised.

INHERITANCE OF ALBINISM IN ORCHIDS.

FLOWERS of two interesting hybrids of *Paphiopedilum insigne* Sanderæ are sent from the collection of Max Isaac, Esq., Wildecroft, Blundellsands, near Liverpool (gr. Mr. Driver), which supplement the information given under the above heading (pp. 58, 103, 106). In one case the pollen parent was *P. Lawrenceanum* Hyeaenum, and in the other *P. × Maudiaë*, and Mr. Driver remarks that both were expected to yield albinos, instead of which they have gone back almost to ordinary coloured forms. They are thus parallel to the cases previously recorded.

The hybrid between the ordinary *P. insigne* and *P. Lawrenceanum* is *P. × Eucharis*, and as their albino varieties come true from self-fertilised seed, it might have been anticipated that these latter when intercrossed would produce an albino hybrid—at all events at the time when the cross was made. Instead of this only a light-coloured form of *P. × Eucharis* is produced.

P. insigne Sanderæ crossed with the albino *P. callosum* Sanderæ, yielded a light-coloured form of *P. × Leoneæ*, instead of an albino, as was previously recorded.

The case of *P. insigne Sanderæ* crossed with *P. × Maudiaë* is decidedly interesting. The latter is a true albino, raised from the albino varieties *P. callosum Sanderæ* and *P. Lawrenceanum Hyeaenum*, but when united with *P. insigne Sanderæ* it yields a coloured hybrid closely approaching the forms of *P. × Eucharis* and *P. × Leoneæ* just mentioned, which hybrids are very closely allied. Theoretically it should be exactly intermediate between them, and it would be very interesting to compare the three in a living state. *P. × Maudiaë* on the whole most resembles *P. callosum Sanderæ* in shape, as the petals are somewhat curved and drooping, not straight and horizontal, as in *P. Lawrenceanum*, but these differences are lost in the secondary hybrid, and the two now sent might pass as forms of one without evidence of their origin. They are cases of partial reversion, analagous to those previously recorded.

It is rather curious that out of the six possible combinations between *P. callosum Sanderæ*, *P. Lawrenceanum Hyeaenum*, *P. insigne Sanderæ* and *P. bellatulum album*, all of which have been raised and have now flowered, only the first should have reproduced the albino character. It would be interesting to repeat the cross, to see whether history repeats itself. *P. bellatulum album* should also be self-fertilised, for we know that the other three reproduce themselves true from seed. This diversity of behaviour when the same plants are selfed and crossed is curious, and difference of opinion exists as to the cause, but I believe it illustrates very well the phenomena of self and cross-fertilisation. Self-fertilisation, like in-and-in breeding, tends to degeneracy, while cross-fertilisation affords a corrective stimulus and a means of escape from a too narrow specialisation. This covers—and I intended it to cover when explained at page 60—not only distinct species, but distinct varieties and races, and even individuals of distinct ancestry that may possess certain features in common, albinism for example, and the limitation afterwards made to albinos of distinct species was not mine. We have seen by the photographs at pp. 104, 105, that *P. bellatulum album × insigne Sanderæ* does not yield albinos, as it ought to have done under the theory of “complementary colour factors,” and I believe that a much simpler explanation meets the case. The colour factor, even on that explanation, is simply the return of something that was there before, and may be regarded as a return to the normal. On this explanation *P. × Maudiaë* behaves like a self-fertilised plant, but in any case it is anomalous, as it behaves differently from the other five. One cannot lightly throw *P. insigne Sanderæ* overboard on the ground that it is not a *pure* albino—the point is that it maintains its character when self-fertilised, but reverts when crossed. In some cases albinos of distinct species when intercrossed have yielded both albinos and coloured forms out of the same capsule, and such are clearly examples of that dissociation of

character which is such a common character among secondary hybrids.

Some of these reversions should certainly be self-fertilised, to test the question whether albinism returns in the seedlings. The Mendelian prediction is that on an average seven of such seedlings should be albinos to nine coloured forms.

R. A. ROLFE.

SEEDLING ORCHIDS.

WHEREVER the raising of Orchids from seed is practised there are always some that need potting in the early spring and throughout the summer. The neglect of seedlings in the early stage often means two or three extra years before flowers are produced. In the first instance they should be placed several in a small receptacle, but later, when the first leaf is made, it is best to pot them singly, although some growers object to this method, because of the additional space; but the plants do not require disturbing again for some months, and when this becomes a necessity it merely consists of giving a larger pot without any injury to the roots, which must accrue if two or three are arranged together. Any that require more root-room ought now to be repotted without further delay, then they have an opportunity to re-establish themselves before the winter. The compost is made up of polypodium fibre, peat, and sphagnum in equal parts, which ought to be cut up rather finer than is necessary for older plants. A sprinkling of silver sand and crushed crocks is also essential. When repotting *Cypripediums* a little fibry loam may be substituted for the polypodium. The syringe should be used freely between the pots, and also overhead when outside conditions are favourable, to induce quick and healthy growth. A keen look-out must be kept for insect foes, particularly thrips. When this pest is present it is advisable to spray the seedlings just prior to starting the fumigating lamps; but a better way is to vaporise the division at fortnightly intervals, especially at this season, when thrips are so numerous on plants out in the open ground.—T. ANSTISS in *Journal of Horticulture*.

SOPHRONITIS GRANDIFLORA.

THIS bright little Orchid has commenced to grow, and any repotting or surfacing may be taken in hand. It should not be disturbed more than necessary, unless a specimen has become leafless in the centre, when a thorough overhauling is necessary. They enjoy pans rather than pots, being more or less surface rooting plants, and if the former are chosen, they can be suspended either in the cool or intermediate houses. From the subject noted above several pretty hybrids have originated, and these should be cultivated in a temperature varying from 55deg. to 65deg F., and carefully watched for new roots to appear, when fresh compost can be given as required.—T. ANSTISS in *Journal of Horticulture*.

CATTLEYA × O'BRIENIANA.

MR. F. C. PUDDLE, Scampton Hall Gardens, Billington, Yorks., sends the two-flowered inflorescence and an old pseudobulb of a plant that was purchased at a London sale as newly imported *Cattleya dolosa*, but it is suggested that it may be a natural hybrid, because the habit is not at all like *C. dolosa*. The pseudobulb sent is rather over six inches long, and the flowers are intermediate in shape, over $4\frac{1}{2}$ inches in diameter, and light purple in colour. The petals are broad, the side lobes of the lip slightly exceeding the column, and the disc white. It agrees with *C. × O'Brieniana*, which is now believed to be a natural hybrid between *C. dolosa* and *C. Loddigesii*, and whose history may be summarised as follows:—In December, 1889, *Cattleya O'Brieniana* was exhibited at a meeting of the R. H. S. by Messrs. Sander, and was recorded as a pale lilac flower, with the lip lined with purple on the upper surface (*Gard. Chron.*, 1889, i. p. 700). A year later it was again exhibited, and received an Award of Merit, being recorded as a nice rosy lilac species (*l. c.* 1890, i, p. 702.) A plate was prepared for *Reichenbachia*, where the plant appeared as *C. Loddigesii* var. *O'Brieniana*, Rolfe (ser. 1, i. p. 85, t. 40,) and I remarked that the side lobes of the lip were shorter and altogether smaller than in typical *C. Loddigesii*, to which, however, it bore so close a resemblance in other respects that I did not see how to distinguish it except as a variety. Nothing was recorded of its habitat, but Messrs. Sander remarked—"Its habit of growth when first seen led us to think we had at last received an importation of *Lælia Jongheana*, but when its flower buds appeared we were inclined to think it *C. Harrisoniæ*." In December, 1894, information came to hand which placed its origin in a new light. A *Cattleya* flowered with M. A. A. Peeters, of Brussels, which it was clearly stated came out of an importation of *Cattleya dolosa* from the province of Minas Geraes, Brazil, and which I immediately identified with Messrs. Sander's plant. This gave a clue to the dwarfed side lobes of the lip, and I then pointed out its resemblance to *C. dolosa* and *C. Loddigesii*, and expressed the opinion that it was a natural hybrid between them (*O. R.* iii. p. 11). Of the original plant I added:—"From enquiries made I am inclined to think it came either with *C. dolosa* or *C. Loddigesii*, or both—at all events, I am told that the last named came from the same region . . . Had I known the history of the plant from the outset, and been able to compare it with each of the supposed parents, its hybrid origin might have been suspected before." M. Forget has recently confirmed the evidence that the two species occur in the province of Minas Geraes, and are cool growers, and it would be interesting if some one would now cross them together, and thus complete the history of the plant.

R. A. R.

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R. A. R.

ODONTOGLOSSUM CRISPUM QUEEN OF THE EARTH.

It has several times been recorded that the markings on certain spotted *Odontoglossums* varies from year to year, but we do not remember such a remarkable change as that here illustrated. Two years ago we figured (*O.R.* xiv. p. 137, fig. 17) a handsome *Odontoglossum* bearing the name of *O. crispum* Queen of the Earth, from the collection of De Barri Crawshay, Esq., Rosefield, Sevenoaks. Some little doubt as to its origin was expressed at the time, though we were afterwards informed that it appeared

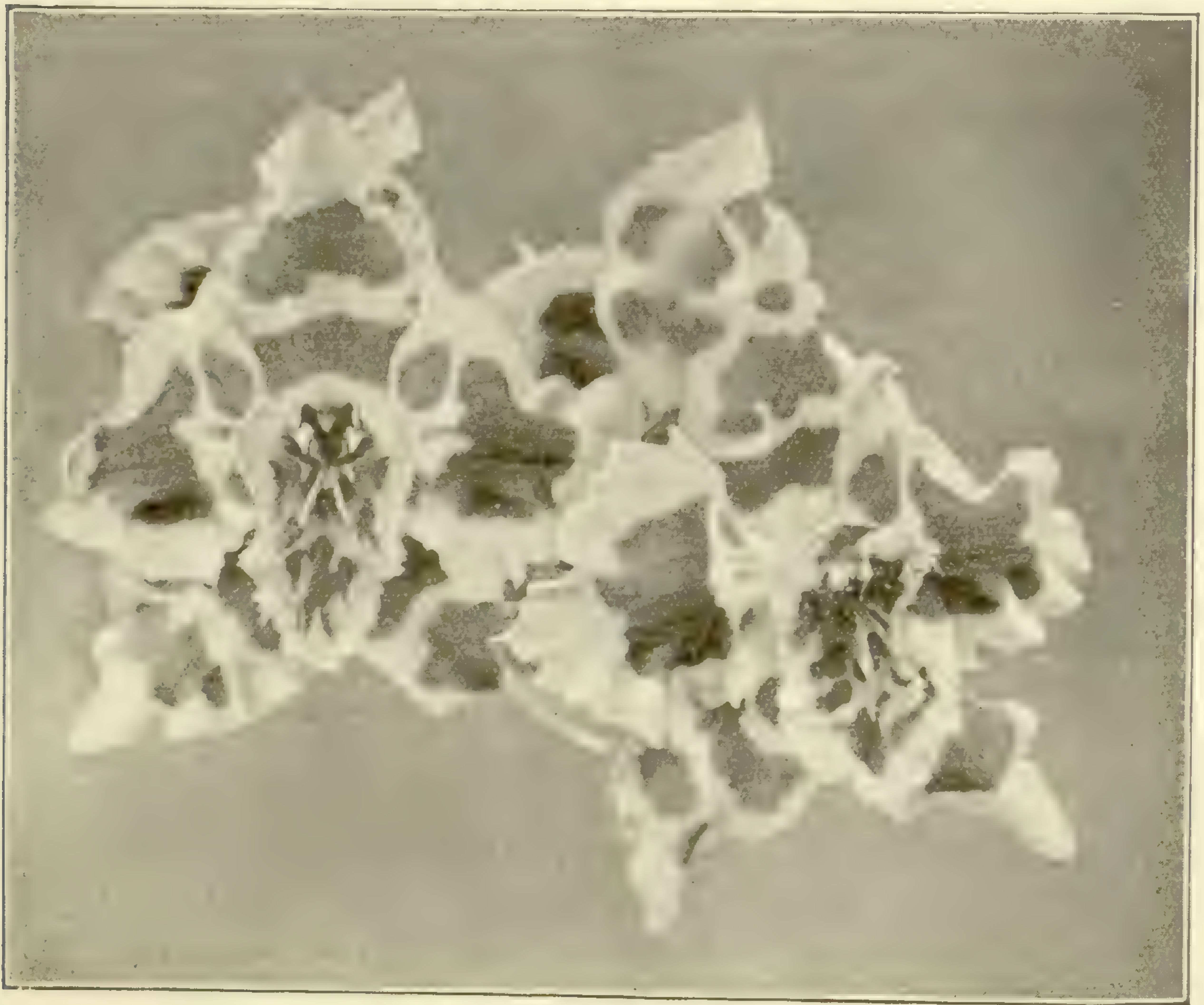


Fig. 28. *ODONTOGLOSSUM CRISPUM QUEEN OF THE EARTH*
(as it flowered in 1906).

in an importation of *O. crispum*. It has now flowered again, and received a First-class Certificate from the R. H. S. on April 28th last, as recorded at page 170, where it was remarked that the greater part of the sepals and petals were covered with large blotches of reddish claret colour, of a much darker tint than when recorded and figured two years ago. Mr. Crawshay has again sent a life-sized photograph of the inflorescence, from which we have selected for reproduction a portion showing three of the flowers, and without the positive evidence which Mr. Crawshay is able to give, it would

seem almost impossible that two such different kinds of flowers could be produced by the same plant. The figure on this page shows the flowers produced about three months ago, while on the preceding page is given the original figure for comparison. A marked feature about the original flowers is the regular shape and markings, with very broad white margins to the segments, but now the shape is less regular, and the white margins are



Fig. 29. ODONTOGLOSSUM CRISPUM QUEEN OF THE EARTH
(as it flowered in 1908).

broken up into a series of irregular blotches, those on the petals being compared by Mr. Crawshay to "eyebrows." These differences are very clearly shown in the illustrations, and the darker colour of the spots at the second time of flowering is also apparent, though on this point nothing more can be said, for we have not seen living flowers. The plant was purchased

at a sale at Messrs. Protheroe and Morris's Rooms on March 23rd, 1906, and its history was thus recorded: "One of the most beautiful flowers, and by far the most remarkable, was a fine purple-blotched *Odontoglossum* sent by M. Chas. Vuylsteke, and about which there were conflicting opinions as to whether it was to be considered a *crispum* or an *ardentissimum*. It had considerable resemblance to *O. × ardentissimum* in the sepals and petals, but the labellum indicated *O. crispum*. Sold without name or qualification, it was acquired by De Barri Crawshay, Esq., for 300 guineas" (*Gard Chron.* 1906, i. p. 197). Over a year ago we saw the plant, and Mr. Crawshay pointed out that it was clearly an imported piece, not a home raised seedling, for there was no trace of small seedling bulbs. Mr. Crawshay remarks that the plant is now admitted to be a *crispum*, as he has always considered it to be, and the evidence now seems to be conclusive. The point about its remarkable behaviour must be left for future investigation, and future flowerings may throw further light on the subject.

CALENDAR OF OPERATIONS FOR AUGUST.

By W. J. MORGAN, Rann Lea Gardens, Rainhill, Lancs.

ODONTOGLOSSUMS.—The end of this month and the early part of September is the best time of the year to go through the *Odontoglossum* *crispums*, and any of the hybrids, which require potting, for with the cooler weather coming on they soon get over the check, and are not so liable to shrivel as when done earlier. It should not be made a hard and fast rule, however, to leave everything till the autumn, as if a plant is seen to be in bad health it is better repotted at once, whatever the time of the year, than left to linger on till the autumn. As a rule a plant that gets sickly can generally be brought back to good health by repotting. It also frequently happens that a plant will grow out of season, and this should also be repotted when the growth is about half made, and not left till the general potting season, for when the bulbs are made up they root very little, and have no chance to get established again before the plant shrivels. In repotting, if the old material is at all sour it should be cleaned away from the roots and carefully replaced with new, keeping the plant just below the rim of the pot, and the young growth in the centre; then it will allow room for two year's growth without again disturbing it. A mixture of *Polypodium* fibre, leaves (not leaf-mould), and moss suits them well, using quite half *Polypodium*, with crushed crocks and sand added to keep it porous. We top the pots up with the same mixture as is used for potting, as we find that the roots go down unto the pots better than when all moss is used for finishing the tops off. Plants that have been repotted should be staged separately from those that are only top-dressed, and then no mistakes will occur in watering. The stages should also be damped more frequently than where the top-

dressed plants are staged, and not quite so much ventilation given at their end of the house. Spraying overhead in nice weather will help to establish them again.

Odontoglossum *Rossii*, *Uroskinneri*, *Cervantesii*, and *bictoniense* do better in an intermediate temperature if room can be found for them. *O. Rossii* and *Cervantesii* grow well in pans suspended from the roof.

CYPRIPEDIUMS.—*C. insigne*, *Fairrieanum*, and their hybrids will soon be showing their flower spikes. Frequently in large plants the leaves overhang each other considerably, and stakes should be put in to keep them from interfering with the growth of the spike, as the young spikes have not strength enough to push the leaves over from them. Care should be taken in watering, but they should never be dried off. They will require sufficient water to just keep them moist at all times. The size of the pot and dryness of the house must always be taken into consideration when watering, as well as the compost they have been potted in. When plants are received from different sources I find the best thing to do with them is to get them potted into our own compost as soon as possible, and then I know what I am watering, as there are hardly two growers who use the same compost or pot in the same way—and not only is this the case with *Cypripediums* but with all classes of Orchids. If one knows the conditions and a plant goes wrong—as they will at times, even with the best growers—one can generally get at the cause of it, and with a little care restore it to health. A short time since, when looking through a collection of Orchids I was asked what was the cause of them not doing well. The houses were all right, also the hot water piping and the water supply, but when I pointed out what was the cause of it, namely, plants in too many different growers' composts, and all getting watered as for one style of potting, the answer was: "Well, they were all right when they came, so how could that be the cause?" It was some time since some of them came, by the look of some of them, and had they all been potted the first season they had been there, they would probably have been all right now.

CATTLEYS.—There will still be Cattleyas and *Lælias* and hybrids to pot or topdress, for with the great variety of these we have now, and flowering, as they do, all the year round, there are always a few that want potting, and these should not be left till any certain season. Pot or topdress them as soon as they commence to make new roots, then they do not get checked when making up their new growth. A little space can always be found where they can have a little extra attention given them until they get hold again, and then they can be put in their usual quarters. Little things done at the right time make all the difference to the appearance of a collection, and it keeps everything in a healthy state.

SHADING.—*Dendrobiums* should have the shading removed altogether

to give the bulbs every chance to ripen before the dull season is here again. Cattleyas and Lælias will require very little shade after the middle of August, only when the sun is very bright in the middle of the day, and by the end of August any stippling on the glass which has been used for Cypripediums, Phalænopsis, and other soft growing varieties, should be washed off, and the blinds only used.

TEMPERATURES.—Fires will have to be attended to earlier in the afternoons, so that the pipes can be slowly warmed to keep the temperatures up after the sun has gone down. Starting the fires early is better for the boilers and plants than leaving them till the sun has lost its power, and then rushing the heat round, as you then have no command of your heat, and it is a waste of fuel and does harm to the plants as well as the boilers. A sudden chill always does a lot of harm early in the season. Boilers and pipes that require repairing or replacing should be done as soon as possible, as it is not safe to be without fires later than August.

WATERING.—Nearly all plants will require less water, and more care in giving it, than has been the case during the hotter weather. The supply must not be withheld entirely, but gradually lessened so that the young growths have a chance to harden before the end of September, and then they will generally go through the winter alright. It is surprising how little water they require after August, if the houses are kept damped and the syringe is used on bright days, although more ventilation is used during the ripening season.

SEEDLINGS, as soon as they are large enough to handle, should be pricked off and grown on as fast as possible. Keep the temperatures even, and the house or frames well damped, which will save watering the seedlings so much. Keep them near the glass, and well shaded for some time yet, whenever the sun is bright. Slugs and cockroaches should be kept down, or they soon cause havoc amongst a batch of small seedlings. Hybridising is very interesting work, and although one does not always get the best results the interest repays for the extra trouble. Any seedlings that were pricked off in the spring and require a larger pot should be shifted on before the winter, and kept going. They are better kept moving till they reach flowering size, when they can be treated the same as the other flowering plants.

Many plants will be showing flower now, and although it takes a long time for them to develop their spikes and flowers they should be watched for staking and watering, as crooked stems and stunted flowers are a year's work wasted. THRIP must also be watched for, as they soon injure the buds. If the houses are kept fumigated about every fortnight or so thrip or spider will not have much chance to make headway. Any plants that require sponging should be done before the flowers open, then there is no danger of

damaging the buds. Pots should be washed, and the compost re-topped if necessary with fresh moss, as it all adds to the appearance of the flowers, and gives a better appearance generally, and with such attention slugs are naturally kept in check.

Now that the busiest season is past, a little time can more easily be spared for pot washing and restaging plants, so as to get as much light and air round each plant as possible, and give them a better chance to go through the winter. Just now, too, a fortnight's holiday will help to ripen the grower after all the sweating and bustle during the hot weather, as Orchid growing differs so much from the ordinary routine of gardening. It is a constant all the year round worry, and seven days a week, and not eight-hour days either, so that the grower deserves a little rest at least once a year.

DAMPING should be done a little earlier, so that the moisture does not settle too heavily on the foliage when the weather is at all chilly outside, as it soon causes spot, especially if the temperatures drop at all. We use our blinds if there is any likelihood of a chilly night, as it keeps the houses even, without using so much heat. If the blinds are left up till dark, and rolled up early in the morning, they will not make any difference to the light which is so necessary to the plants.

LESSER KNOWN ORCHIDS.

THE last issue of the *Journal of the Royal Horticultural Society* contains a very interesting paper on "Lesser known Orchids," by Mr. F. W. Moore, V.M.H., Curator of the Royal Botanic Gardens, Glasnevin, illustrated by figures, reproduced from photographs, of the following eleven species: *Gongora similis*, the remarkable *Bulbophyllum tremulum* and *B. dichromum*, *Eulophiella Peetersiana*, *Arachnanthe annamensis*, *Epidendrum vesicatum*, *Cymbidium grandiflorum*, *Dendrobium triflorum*, *D. cymbidioides* and *D. linguiforme*, and *Masdevallia velifera*. The author's intention was to mention a few uncommon Orchids having some special feature to recommend them, and under the definition "special feature" he includes "Orchid giants, Orchid pigmies, Orchids with peculiar habit of growth, such as a pendulous habit, Orchids of remarkable appearance, Orchids requiring special treatment, Orchids with peculiar structure of flower, and Orchids which have masqueraded in the names of other Orchids and have been generally known under the wrong name," all of which peculiarities are well represented in the rich collection at Glasnevin.

Among the features of structural interest mentioned are the remarkable fleshy labellum of *Stanhopea*, the heavily-fringed labellum of *Chondrorhyncha Chestertoni* and *Brassavola Digbyana*, and of those which have the additional feature of being mobile, *Bulbophyllum barbigerum*, *tremulum*

and *miniatum*. An example of an Orchid with a swollen rachis is given in *Bulbophyllum inflatum*, a species having greenish hairy flowers, and when these have fallen away "the persistent rachis strongly resembles a small pickling cucumber, two or three inches in length, three-quarters to one inch in diameter, and quite rough from the scars left by the fallen flowers."

Among giant Orchids for which space is found at Glasnevin are the handsome *Eulophiella Peetersiana*, which succeeds well—and curiously enough Mr. Moore attributes his success in cultivating it to want of space—the striking *Arachnanthe Lowii*, remarkable for its dimorphic flowers, which has been in the collection for twenty years, *Cyrtopodium Andersoni*, and *Cypripedium Lindleyanum*, which has been at Glasnevin since 1885, and is still healthy and vigorous.

Pigmy Orchids are abundant, and Mr. Moore remarks that there is "a growing taste for them, and collectors are disappointed because there are not long lists of them in nursery catalogues and because they are not cheap. How," he continues, "could it be otherwise? For years relegated to the limbo of what was contemptuously called 'botanical stuff,' they were unheeded and unasked for, and to this fact many owe their presence in the Glasnevin collection." *Pleurothallis astrophora* Mr. Moore considers to be a typical plant in this class. "I consider this to be one of the most beautiful of all minute Orchids," he remarks. "I got it in 1891, but not for nothing. When I look at this pigmy I have always felt ashamed of the price I paid for it, but I have never regretted it; it has given so much pleasure to visitors. The plant when in flower is not more than three inches high leaves about $\frac{3}{4}$ inch by $\frac{1}{4}$ inch. It is very floriferous; the flowers are numerous, very minute, and bright glistening purple. When held towards the light they seem to sparkle all over." Several other tiny species are mentioned, and among them *Pleurothallis hypnicola*, a native of Brazil, "nearly the smallest of all Orchids. It grows in dense tufts, the leaves from $\frac{1}{4}$ to $\frac{1}{2}$ inch in length, the flowers pale yellow, with tiny purple lip. They are so inconspicuous that they can hardly be seen."

"Every collector," Mr. Moore remarks, "occasionally has a slice of luck, and the acquisition of *Arachnanthe annamensis* was such a slice. . . . When looking through the importations of Orchids sent to Messrs. F. Sander and Sons, from Annam, I selected one from a number of distichous-leaved plants. I got it in June, 1904, and it flowered in June, 1905, and it has flowered every year since." It is one of the striking species figured.

Among Orchids which have a pendulous habit, and which "absolutely refuse to grow, or even live, in any other position," mention is made of the rare *Masdevallia deorsa*, *Brassavola nodosa*, *Cattleya citrina*, *Scuticaria Steelii*, *Lycaste Dyeriana* and *Epidendrum vesicatum*. The latter has thick, glaucous leaves, which are "sharply folded inwards at the midrib, united

at the base, free above, so that they are almost amplexicaul, and equitant. They are scale-like at the base, gradually becoming larger, the upper pair forming a large cup in which the flowers are. A series of small tanks is thus formed, and if the stem be kept upright water lodges in these tanks and the leaves damp off, hence the necessity for the pendulous position."

Conversely, Mr. Moore mentions *Cœlogyne triplicatula* as an Orchid which will only grow in an upright position. Many Orchids, of course, grow naturally in this position, but Mr. Moore remarks that to see this *Cœlogyne* growing upright "looks almost uncanny. It has been in the Glasnevin collection over five years, and the slide shows what stupid mistakes may be made. The angle of the imported pseudobulbs towards the stem spoke eloquently, but I would not heed, and put the stem flat; it struggled for two years, making poor weak growths, and looking thoroughly unhappy, the pseudobulbs keeping at a curious angle. Told to put it any way he liked, my grower put it upright, and the result was magical. It made in a few months a strong growth which flowered, and every year since further progress."

Among peculiarities of another kind, Mr. Moore mentions species whose flowers are self-fertile, as certain varieties of *Dendrobium Brymerianum*; or that refuse to open, as *Cymbidium grandiflorum* sometimes does; or that have the flower-stalk immersed in the leaf, as *Pleurothallis immersa*; or that have the lip uppermost, as *Eria globifera*, which Mr. Moore remarks is "very happily named, as the small pseudobulbs are globose."

Among the masqueraders, he mentions *Dendrobium cymbidioides*, or rather a plant which had passed as such for fourteen years, until another plant which flowered in the collection was identified as such, and this ultimately led to the discovery that the older one was in reality *D. triflorum*. He also mentions the curious case of *Restrepia antennifera*, the type of the genus, which was for so long thought to be the well-known garden plant with spotted flowers, but the appearance in cultivation of two species with striped flowers led to the discovery that one of them was the original *R. antennifera*, while the spotted one was *R. maculata*, Lindl. The curious thing is that Lindley was right when originally describing the latter as distinct, and afterwards wrong when reducing it to a synonym of *R. antennifera*. The case of *Cymbidium Dayanum* is also mentioned, but all have been detailed in these pages.

After mentioning the curious little *Dendrobium linguiforme*, and other Australian species, as requiring quite different treatment from the majority of Orchids, the paper concludes with a reference to several other curious and interesting Orchids, as *Hexisia bidentata* and *Hexadesmia crurigera*, and various species of *Maxillaria* and *Masdevallia*, the latter genus being one of Mr. Moore's favourites.

M. velifera is mentioned as extremely rare, the flower of a dull lurid brown, with a shining surface, and a smell even worse than a *Stapelia*, but not so all-pervading. *M. trinema* is described as one of the rarest and most beautiful of *Masdevallias*, and one which always attracts the attention of visitors. *M. muscosa* and *M. xipheres* are two remarkable species, having sensitive lips and the peduncles covered with mossy hairs. *M. triglochin* belongs to another section of the genus, *Triaristellæ*, which contains several very pretty species with minute flowers, and it certainly is the most uncommon of those in cultivation.

It is an extremely interesting and valuable paper, by one of our most enthusiastic and expert cultivators, which should be read in the original.

MASDEVALLIA TOVARENSIS.

A FINE specimen of the chaste and beautiful *Masdevallia towarensis* is figured in the *Journal of Horticulture* (1908, ii. p. 99) with the following note on its culture: "Amongst the best of useful easily-grown Orchids the Tovar *Masdevallia* merits a foremost position, and this it is gradually but surely securing. It is somewhat surprising, however, that the species should have been cultivated in Britain since 1865, and for a good portion of that time be comparatively neglected as a garden plant. In some collections of Orchids it has been duly prized, but beyond these it was scarcely known. It has not been alone in this respect, and one reason why it and others are becoming general favourites is due to the fact that the "cool house" for Orchids is now almost indispensable in many establishments. In gardens of very moderate extent accommodation can be provided for Orchids that are so cheaply and easily grown as these, for though all must admire the gorgeous *Cattleyas*, the charmingly graceful *Phalænopsis*, and the varied *Dendrobiums*, many are debarred from the enjoyment of their beauty by the expense attending their purchase and culture. The cool species are, therefore, essentially the people's Orchids, and their popularity must unquestionably advance as long as beautiful flowers find favour. *Masdevallia towarensis* is one of the most floriferous species in the genus . . . The *Masdevallia* succeeds under the same culture as the majority of other species, requiring very little artificial heat at any time. A constant supply of moisture is, however, essential without an approach to stagnation, which is almost as injurious as drought. A compost of fresh sphagnum moss and peat suits the plant, with thorough drainage, and a cool moist position in the house. The flower stems should not be cut away when the blooms fade, but these only should be removed, and the stems will produce flowers year after year.—R. H." The specimen figured is in a shallow pot six inches in diameter, and shows over four dozen of its pure white flowers.

SPATHOGLOTTIS × COLMANII AND ITS PARENTS

THE annexed figures represent the handsome *Spathoglottis* × *Colmanii*, raised in the collection of Sir Jeremiah Colman, Bart., Gatton Park, Reigate, with its parents, *S. aurea*, Gatton Park var., and *S. × aureo-*

Fig. 30. *S. × aureo-Vieillardii*.Fig. 31. *S. aurea*, GATTON PARK VAR.Fig. 32. *S. × Colmanii*.

Vieillardii, and are reproduced from a photograph taken by Mr. W. P. Bound some time ago.

S. × Colmanii (fig. 32) flowered over two years ago, and received an Award of Merit from the R. H. S. on February 13th, 1906 (*O.R.* xiv. pp. 80,

83). As the figure shows, it bears a considerable resemblance to *S. × aureo-Vieillardii*, but differs somewhat in the colour and markings of the flower, and the details of the lip, the front lobe especially being smaller. The ground colour is bright yellow, more or less dotted and slightly suffused with purple, and the side lobes of the lip bright crimson red, making a very charming contrast. It varies considerably, for a clear yellow variety, with a crimson crest, appeared out of the same capsule, and received an Award of Merit from the R. H. S. in March, 1907, under the name of *S. × Colmanii aurea* (*O.R.* xv. p. 114), and there is also the variety *fulvissima* (*O.R.* xiv. p. 243), having the flowers prettily marbled with rosy red.

S. × AUREO-VIEILLARDII (fig. 30) was the first hybrid in the genus, and was raised by Messrs. James Veitch & Sons, Chelsea. It flowered for the first time in May, 1897, and was exhibited at the Temple Show (*O.R.* v. p. 223). In May of the following year it received a First-class Certificate from the R. H. S. (*O.R.* vi. p. 185). It has light yellow flowers, with numerous purple dots on the petals, and the sepals crimson on the back, while the side lobes of the lip and the crest are yellow, densely dotted with crimson. The parentage was originally recorded as *S. aurea* × *S. Viellardii*, but the seed parent was really *S. Kimballiana*, which Reichenbach made a synonym of *S. aurea*. It differs, however, in having larger flowers, the sepals purple at the back, and the front lobe of the lip much dilated at the apex.

S. AUREA, GATTON PARK VAR. (fig. 31) was raised at Gatton Park, from a self-fertilised capsule of *S. aurea*. It has deep yellow flowers, with some crimson at the base of the lip. Its characters are not well shown in the photograph, for the side lobes of the lip are not expanded, and the front lobe is seen almost end on, so that its shape can scarcely be made out. It agrees with the type, however, in all essential characters. *S. aurea* was originally discovered on Mt. Ophir, Malacca, by Thomas Lobb, and was introduced to cultivation by Messrs. James Veitch & Sons in 1849, but only a few plants reached home alive, and these gradually died out after flowering for one or two seasons. The species was then lost sight of for many years, but has recently been re-introduced. The flowers are smaller than in *S. Kimballiana*, the sepals not crimson on the back, and the front lobe of the lip narrowly spathulate and acute.

SOCIETIES.

ROYAL HORTICULTURAL.

THE great Summer Exhibition was held at Holland House, Kensington, on July 7th and 8th, and brought together a very fine display of Orchids, chiefly from trade exhibitors. The awards consisted of one Gold and one Silver Flora Medal, three Silver Cups, two First-class Certificates, one Award of Merit, and two Cultural Commendations.

Lieut.-Col. G. L. Holford, C.I.E., C.V.O., Westonbirt (gr. Mr. Alexander), received a First-class Certificate for *Lælio-cattleya* *Clive magnifica* (*L. præstans* × *C. Dowiana aurea*), a remarkably large and brilliantly coloured form ; an Award of Merit for *Odontoglossum* × *Eleanor*, Westonbirt var. (*cirrhosum* × *Uroskinnei*), bearing a panicle of about thirty flowers, with yellowish-white sepals and petals, closely spotted with dark brown, and the lip white with purple spots; and a Cultural Commendation for *O.* × *Othello*, Westonbirt var., bearing two magnificent spikes of very richly coloured flowers. He also sent *Sophrocatlælia* *Danæ* (*Sophrolælia læta* Orpetiana × *Cattleya Harrisoniana*), a handsome dwarf hybrid, having bright rose-purple sepals and petals, and a yellow throat to the lip, with some light purple in front, and an intervening whitish area.

H. S. Goodson, Esq., West Hill, Putney (gr. Mr. Day), received a First-class Certificate for *Odontoglossum* × *illustre* King of England, bearing a spike of eleven fine flowers, very heavily blotched with violet-purple on the sepals and petals, and with darker chocolate purple on the lip. He also sent *O. Pescatorei* *Sidneyanum*, a large white flower handsomely blotched with purple on the lip, and a good *Cattleya* × *F. W. Wigan*.

Walter Cobb, Esq., Rusper (gr. Mr. Salter), sent *Odontoglossum* × *formosum*, Cobb's var., having white flowers heavily blotched with violet.

F. M. Ogilvie, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), sent the fine, nearly white *Miltonia vexillaria* *Queen Alexandra*, and *M. v. Shrubbery* var., a large rosy form with darker radiating lines on the lip.

W. Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), sent *Odontioda Charlesworthii*, bearing two very fine ruby-crimson flowers, with a deep yellow crest to the lip.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a magnificent group, very rich in detail, and very effectively arranged, to which a Gold Medal was awarded. It included a very fine series of *Lælio-cattleya* *Canhamiana*, *Fascinator*, *Aphrodite*, *callistoglossa*, and others, with a dark L.-c. *Bertha Fournier*, and the rich orange yellow L.-c. *Golden Oriole*, many fine *Cattleyas*, including a good example of *C. Mossiæ Wageneri* with a dozen flowers, two plants of the rare *C. Warneri alba*, *C. Mendelii* *Queen of Spain*, *C. luteola*, &c., with a beautiful series of *Odontoglossum crispum*, × *Rolfeæ*, × *Othello*, and others, among the more noteworthy being *O.* × *armainvillierense xanthotes* (*Pescatorei album* × *crispum xanthotes*), all the seedlings of which have been white with yellow markings. There were also good examples of *Odontioda Lutetia*, *O. heatonensis* and *O. Charlesworthii*, several fine flowers of *Stanhopea tigrina* arranged on a bank of moss, a good *Sobralia xantholeuca*, *Phalænopsis violacea*, *Trichopilia Backhouseana*, *Miltonia* × *Hyeana*, with two good spikes, *Lycaste Skin-*

neri alba, some good *Oncidiums*, the rare South African *Bartholina pectinata*, *Nanodes Medusæ*, *Promenæa xanthina*, *Catasetum atratum*, *Dendrochilum filiforme*, *Cochlioda Noëtzliana*, *Ornithocephalus grandiflorus*, *Masdevallia Reichenbachiana*, a fine clump of *Barkeria spectabilis* bearing a dozen spikes, *Vanda* × *amœna* *Lauchiana*, *Dendrobium chrysotoxum*, *Maxillaria tenuifolia*, *Cypripedium Parishii*, and many others, the whole forming one of the finest groups yet staged at Holland House.

Messrs. Sander & Sons, St. Albans and Bruges, exhibited a very fine group, in which numerous *Odontoglossums*, *Cattleyas*, *Lælio-cattleyas*, and *Cypripediums*, with *Phalænopsis amabilis Rimestadiana*, made a most effective display. The *Odontoglossums* included some very beautiful forms of *O.* × *crispum*, × *ardentissimum*, and × *Harryano-crispum*, showing very great variety, with examples of *O.* × *amabile*, × *Rolfeæ*, and others. Noteworthy *Cattleyas* were the beautiful *C. Mossiæ Wageri* and *Reineckiana*, with other white and coloured forms, also some good *C. Warscewiczii Sanderiana*. The forms of *Lælio-cattleya Martinetii* were numerous and beautiful, the varieties *Rex* and *Vulcan* being very richly coloured. There were also many good *Cypripedium bellatulum*, a magnificent form of *C. Godefroyæ leucochilum*, the handsome *C.* × *Orion* (× *seligerum majus* × *Rothschildianum*), three fine specimens of *Odontonia Lairesseæ*, *Maxillaria Sanderiana*, *M. Desvauxiana* and *M. Houtteana*, *Calanthe veratrifolia*, a lot of good *Miltonia vexillaria*, *Zygopetalum rostratum*, *Dendrobium nudum*, *Oncidium curtum*, *Harrisonianum*, *macranthum*, *longipes*, and others, *Epidendrum prismatocarpum* and *Brassavolæ*, two very fine *Vanda cœrulea*, *Brassolælia Jessopi*, *Warscewiczella discolor*, *Promenæa stapelioides*, *Camarotis purpurea*, *Renanthera Imschootiana*, and numerous others. The group was very effectively broken up in a series of dells, and a Silver Cup was awarded for this and a group of new plants.

Messrs. Moore, Ltd., Rawdon, Leeds, also received a Silver Cup for a very fine group, backed with graceful palms, and three stands, with virgin cork pockets, in which a number of the plants were placed, making a very tasteful arrangement. Green moss was also used among the plants with great effect. The group included numerous fine *Cattleya Warscewiczii*, *C. Gaskelliana alba*, with other good *Cattleyas* and *Lælio-cattleyas*, *Odontoglossum* × *Rolfeæ magnificum*, excellent in every respect, *O.* × *eximium*, *O.* × *amabile*, the prettily undulated *O. ramosissimum*, and others, *Zygopetalum rostratum*, *Epidendrum nemorale*, *Oncidium leucochilum*, a very fine specimen of *O. cornigerum*, *Brassavola Digbyana*, some very good *Miltonia vexillaria*, *Brassia verrucosa*, two fine examples of the brilliant *Disa* × *Luna*, *Bulbophyllum barbigerum* and *B. Dearei*, *Cirropetalum biflorum*, an interesting Javan species, the brilliant *Broughtonia sanguinea*, *Vanda Bensoni anchorifera*, a good plant of *Lycaste aromatica*, the rare

Trichopilia Galeottiana, *Cœlogyne Mayeriana*, *Promenæa stapelioides*, *Epidendrum atropurpureum*, a good plant of the beautiful *Cypripedium* × *Vipani* with two scapes and four flowers, *C. tonsum*, some good *C. bellatulum* and other interesting species.

Messrs. Hugh Low & Co., Enfield, also staged a very fine group, containing many good *Cattleya Mossiæ*, white and coloured, some fine *C. Mendelii*, one of them with about thirty flowers, *C. Schilleriana*, several specimen plants of *Epidendrum prismatocarpum*, with *E. pentotes*, *vitellinum*, *fuscatum*, and *virens*, the graceful *Cœlogyne Dayana*, and *C. pandurata*, *Odontoglossum Uroskinneri*, *cordatum*, and *Williamsianum*, *Physo-siphon Loddigesii*, *Brassavola Digbyana*, *Cochlioda Nœtzliana*, a nice batch of *Cypripedium niveum*, *C. glaucophyllum*, *C. Chamberlainianum*, and others, *Bulbophyllum Lobbii*, *claptonense* and *siamense*, the pretty little *Cirrhopetalum Cumingii*, *Oncidium macranthum*, *Marshallianum*, *varicosum*, *maculatum*, *divaricatum* and *raniferum*, *Miltonia Rœzlii alba*, *Dendrochilum filiforme*, *Sophrocattleya Chamberlainiana* and *Marriottiana*, and numerous other interesting things. A Silver Cup was awarded for Orchids and other exhibits.

Messrs. Stanley & Co., Southgate, received a Silver Flora Medal for a pretty little group, containing a lot of good *Cattleya Warneri*, with *C. Gaskelliana*, some good *C. Mendelii*, white and coloured forms of *C. Mossiæ*, *Lælia purpurata eximia*, a very richly coloured form, *Oncidium macranthum*, *sarcodes*, *Wentworthianum*, *Cypripedium bellatulum*, and others.

M. Ch. Vuylsteke, Loochristi, Ghent, sent the original plant of *Odontioda Vuylstekeæ*, now bearing a very fine panicle of 39 flowers, much larger, but lighter in colour than when first exhibited, partly, it is suggested, because of the fuller development of the white ground colour, and partly because of its flowering during the hot weather. A Cultural Commendation was awarded.

M. Florent Claes, Etterbeek, Brussels, showed several good forms of *Cattleya Mossiæ* and *Mendelii*, the best being *C. Mendelii*, Claes's var., a beautiful white form, with the throat of the lip yellow, and the front lobe carmine, which colour extends round the apex of the side lobes as a narrow margin.

M. A. A. Peeters, Brussels, sent the beautiful white *Cattleya* × *Madame Myra* Peeters, *C. × Dupreana* (*Warneri* × *Warscewiczii*), a very large and handsome hybrid, most like the latter, having soft rose sepals and petals, and a rich crimson lip, with a yellow throat, becoming paler at the sides, *C. × Caduceus* (*Schofieldiana* × *Gaskelliana*), with light purple sepals and petals, and a strongly three-lobed lip, dark purple in front, and with some yellow on the disc, also a good *C. × lucida* (*Bowringiana* × *Schilleriana*), with seven very dark flowers.

Messrs. G. and A. Clark, Dover, exhibited a magnificent inflorescence of the Lizard Orchid, *Orchis hircina*, from a plant found near Dover at the end of the previous month. It was preserved in a stoppered glass jar of formalin solution, and both form and colour were well preserved. It attracted a large amount of attention.

At the meeting held at the Royal Horticultural Hall, Vincent Square, Westminster, on July 21st, there was a distinct falling off in the Orchid exhibits, though a number of good things were shown, and the awards consisted of three Medals, one First-class Certificate, two Awards of Merit, one Cultural Commendation, and two Botanical Certificates.

Lieut.-Col. G. L. Holford, C.I.E., C.V.O., Westonbirt (gr. Mr. Alexander), staged a group of magnificently-grown specimens, to which a Silver Flora Medal was given. It contained a very beautiful example of *Cattleya Warscewiczii* with fifteen flowers, *C. W. Othello*, a magnificent dark form having very small yellow blotches in the throat, *C. W. Low's* var., bearing spikes of six and four flowers, and *C. W. Frau Melanie Beyrodt*, bearing 22 of its beautiful white flowers with rosy-purple lip, the latter gaining a Cultural Commendation. There were also two fine *C. × Hardyana* and two of *C. × Lord Rothschild*, all having been raised in the collection, the handsome *Sophrolælia læta Orpetiana*, *Brassocattleya Digbyano-Warscewiczii*, a fine form of *Dendrobium regium*, *Miltonia vexillaria superba*, with twelve spikes and an aggregate of 53 of its beautiful flowers, also a fine light form of the species, two well-flowered *Dendrochilum filiforme*, and some good hybrid *Odontoglossums*.

Sir Trevor Lawrence, Bart., K.C.V.O., Burford, Dorking (gr. Mr. White), showed *Lælia × Bella* (*majalis × purpurata*), a handsome thing, having the sepals and petals rose-coloured, but paler at the base, with the front lobe of the lip and apex of the side lobes bright mauve-purple. An Award of Merit was given to *Angræcum Augusti* (Rolfe), a striking species sent from N. E. Rhodesia by Mr. Augustus Old, allied to *A. Kotschyanum*, and having somewhat similar white flowers, with the spur of the lip flexuose and about six inches long, but the fleshy leaves of a distinctly glaucous green. Botanical Certificates were given to *Geodorum purpureum*, an Indian species with erect scapes, drooping at the apex, and whitish flowers marked with purple on the lip, and to *Epidendrum costatum*, a rare Mexican species, with a drooping raceme of reddish-purple flowers.

R. G. Thwaites, Esq., Chessington, Streatham (gr. Mr. Black), received an Award of Merit for *Odontioda Thwaitesii* (*Cochlioda vulcanica × Odontoglossum Harryanum*), a very pretty hybrid, bearing a spike of five flowers and buds, the sepals and petals being of a bronzy claret colour, and the lip lilac-purple with a yellow crest.

J. Foster Alcock, Esq., Northchurch, again showed a hybrid *Sobralia* raised from *S. Wiganiana*, and having the flowers tinged with rose.

W. M. Appleton, Esq., Weston-super-Mare (gr. Mr. Brooks), showed the pretty little *Cypripedium* × *Vipani roseum* (*philippinense* × *niveum*), having white flowers, with lines of rosy-purple dots.

W. P. Burkinshaw, Esq., West Hill, Hessle, Hull (gr. Mr. Barker), sent a very fine plant of *Cattleya Warscewiczii*, Rochford's var., bearing a spike of six richly-coloured flowers, with the yellow blotches on the lip nearly obliterated.

The Right Hon. Lord Rothschild, Tring Park (gr. Mr. Dye), showed an inflorescence of a Mexican *Stanhopea* bearing ten flowers.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a group of choice things, to which a Silver Banksian Medal was given. It contained some good *Odontoglossums* and *Cattleyas*, among the more noteworthy being *O. Schlieperianum citrinum*, *O. Uroskinneri album*, *O. × Gladys*, *O. × Eleanor*, *O. × armainvillierense album*, *Cattleya × Semiramis* (× *Empress Frederick × Warneri*), having dark purple-rose sepals and petals, and a deep ruby crimson lip with some yellow lines at the base, plants of the handsome *Oncidium Lanceanum*, *Miltonia vexillaria albiflora*, *Bulbophyllum saurocephalum*, two finely-bloomed plants of *Ancistrochilus Thomsonianus*, and many other interesting things. A First-class Certificate was given to *Stanhopea tigrina superba*, a very fine dark form of the species.

Messrs. Hugh Low & Co., Enfield, also received a Silver Banksian Medal for a pretty little group, containing several good plants of the handsome *Oncidium Lanceanum* and *O. leucochilum*, *Anguloa Clowesii*, *Cycnoches chlorochilon*, the handsome *Cattleya Mendelii Goliath*, *Lycaste Deppei*, and other good things, with a fine plant of *Dendrochilum filiforme* in the centre, bearing 46 of its graceful racemes of yellow flowers.

Mr. J. Birchenall, Alderley Edge, Cheshire, sent the pretty yellow *Polystachya pubescens*, the rare *Pescatorea Dayana*, *Bollea Lalindei pallida*, a whitish form with pale lilac markings on the segments, and *B. L. aurea*, a light yellow variety.

Messrs. James Veitch & Sons, Chelsea, sent the pretty *Cattleya × Dusseldorfei* var. *Undine*, with pure white flowers.

THE HYBRIDIST.

ODONTIODA THWAITESII.—Hybrids between *Cochlioda* and *Odontoglossum* are becoming numerous, and another has just flowered in the collection of R. G. Thwaites, Esq., Chessington, Streatham (gr. Mr. Black), and received an Award of Merit from the R. H. S. on July 21st last. It was obtained by crossing *Cochlioda vulcanica* with the pollen of *Odontoglossum Harryanum*, and, as in the case of the brilliant *Odontioda Charlesworthii*, the *Odonto-*

glossum parent has served to modify both the shape and colour of the hybrid without leaving any very distinct trace of its own individuality, which is rather curious. The flower is most comparable with that of the *Cochlioda* parent, but it is larger, and the segments are relatively broader and have more substance, while the colour may be compared with that of a brightly coloured *Miltonia spectabilis* Moreliana. It measures two inches across its broadest diameter, but will evidently become larger as the plant gains strength. At present the plant is small, and has produced a spike of five flowers only. The sepals and petals may be described as claret-purple, the latter being slightly undulate, and the lip bright purple, with a yellow crest, which breaks up in front into five or six acute teeth, this being all that remains of the spiny crest of the pollen parent. The lip is nearly free from the base, and diverges from this point, while the column wings are narrow and entire. The stigma is fairly intermediate in character, being confluent in the centre, but constricted above and below, so as to show the greater part of the outline of two distinct lobes. A flower has been kindly sent by Mr. Thwaites, who remarks that the first bloom expanded exactly three years from the time of sowing the seed. He thinks that the rich colour of the flower will be exceedingly useful for hybridising purposes, and that apart from its beautiful colour, it is interesting on account of the intermediate character of the stigma. It is certainly a very promising acquisition.

LÆLIA × *ROGERSII*.—An interesting little hybrid, raised in the collection of O. O. Wrigley, Esq., Bridge Hall, Bury (gr. Mr. Rogers), derived from *L. Cowanii* and *L. Dayana*. The flowers are larger than in the former, and suffused with reddish purple, with the disc of the lip deep yellow, and the apex and margin dark purple. The seed was sown about three years ago, and the plant is flowering while still small, and will probably improve as it gets stronger.

BLETIA COCCINEA.

A VERY distinct and interesting *Bletia* has just flowered at the Cambridge Botanic Garden, which, Mr. Lynch remarks, was collected in Mexico by Dr. Gadow, of Cambridge. On comparison it proves to be *Bletia coccinea*, a species described in 1825 (*Llav. et Lex. Nov. Veg. Descr.*, ii. p. 18), and which does not appear to have been figured or previously cultivated. It is about two feet high and has the typical *Bletia* habit, shape, and floral structure. The lip is deeply three-lobed in the middle, with ample rounded side lobes, and a narrow front lobe somewhat dilated in front, with three keels, which are suddenly elevated in front. The sepals and petals are rather over an inch long, and orange yellow, and the yellowish lip is closely veined with purple on the side lobes. The only species with which it can be confused as regards colour is the allied *B. fulgens*, Rchb. f.—R. A. R.

MILTONIA ROEZLII.

ALTHOUGH scarcely less beautiful than the popular *Miltonia vexillaria*, the charming species here figured is much less frequently met with in good condition, and this probably arises from a difficulty often found in its



Fig. 33. MILTONIA ROEZLII.

culture. It occurs at a much lower elevation than *M. vexillaria*, and therefore requires warmer treatment, a fact sometimes overlooked. The annexed figure represents a very beautiful group grown by Messrs. Hugh Low & Co., and shows what the species is capable of when grown under suitable conditions,

in a warm, moist and shady house, with due precaution as to cleanliness, for thrip and red spider soon work havoc among the foliage if allowed to establish themselves. A layer of moss round the base of the pots is found conducive to that degree of humidity in the atmosphere that the plants like. Care must, however be taken to avoid over-watering during the winter months.

The species was described by Reichenbach towards the end of 1873, under the name of *Odontoglossum Roezlii* (*Gard. Chron.* 1873, pp. 1302, 1303, fig. 269), being dedicated to its discoverer, Benedict Roezl, and it is probably the most beautiful Orchid which bears his name. It is not a little curious to find Reichenbach concluding his description with the query—"Can it be a mule between *O. vexillarium* and *O. Phalænopsis*?" Just previously he had seen a plant in flower, in the establishment of Mr. Wm. Bull, at Chelsea, which plant received a First-class Certificate from the R.H.S. on September 17th, 1873 (*l.c.*, p. 1277). Three days later Mr. Day saw it and sketched it (*Orch. Draw.*, xviii. t. 25), at the same time remarking that Mr. Bull only received a single plant alive, which he had divided into two, and which he believed were the only ones in Europe. This plant may be regarded as the type of the species.

Messrs. Backhouse & Son, of York, however, very soon obtained it, for a week after the original description was published, a note from them appeared, commencing "We enclose dried specimen of *Odontoglossum Roezlii*, received along with some living plants of it, from our collector in South America" (*Gard. Chron.*, 1873, p. 1334). Some of these were acquired by Mr. Day, and one flowered in September, 1874, being then painted (*Orch. Draw.* xviii. t. 49), and on November 2nd he added—"Flowered a white variety of this species. . . . It is a lovely thing. Since September I have flowered several plants [of the species]." In April, 1876, he further remarked that he had had many spikes of four flowers each, and one of five. Another handsome form was drawn on April 6th, 1877 (*l.c.* xxi., t. 37), when Mr. Day remarked—"It is a most useful thing—for fifteen months I was never without flowers of it."

In 1877 Chesterton brought some cases of good plants to Messrs. James Veitch & Sons, at Chelsea, but, they remark, "did not divulge the true locality in which they had been gathered, and in the following year Roezl's nephew, Edward Klaboch, sent some plants to Europe, and since that time it has been frequently imported" (*Man. Orch.* viii. p. 106).

Some particulars relating to its original discovery were given by M. Roezl about ten years after the event (*Orchidophile*, 1883, p. 476) "Towards the end of March, 1873," he remarks, "I was going down the little river Dagua, which flows into the Pacific Ocean. Like all the streams which flow into the ocean from the western Cordillera of New Granada, the

current is rapid. I had reached to about ten miles from the outlet when my attention was arrested by the trunk of a tree that was being borne along down the stream upon which was an Orchid, quite unknown to me, in full bloom. I immediately requested my negro to secure the treasure, a matter of considerable difficulty owing to the strength of the current. He at length succeeded in detaching the plants, three in number, from the log, which proved to be a new species of *Miltonia* (*Odontoglossum*), allied to *Miltonia vexillaria* and *M. Phalænopsis*. Some months later the plant, with other novelties, was acquired by Mr. William Bull, of Chelsea, for the sum of 250 francs." The story seems very imperfect, for he then goes on to say that the plant grows on the horizontal branches of trees, to which its roots adhere without any moss, and also speaks of the warm moist climate, and the necessity for similar treatment at home, adding that the usual cool *Odontoglossum* treatment causes rapid death.

The plant evidently grows on both sides of the Cordillera, for Messrs. Veitch remark that with the exception of the original, the plants in cultivation have been brought "from the valley of the Cauca, on the eastern or opposite side of the western Cordillera. . . . Its habitat is now known to be in the province of Antioquia, on the slopes of the hills near the river Atrato, a tributary of the Cauca, growing on trees and rocks mostly in shade at 1,000-2,000 feet elevation, sometimes associated with *Oncidium Kramerianum*." Messrs. Sander, however, when figuring the plant (*Reichenb.* ser. 1, i. p. 45, t. 69) say—"The native haunts of *Miltonia Roezlii* are the hot valleys of the Dagua River in South America, and there and in the Cauca Valley near Juntas it grows abundantly on low trees. Roezl used to tell us that where it grows, rain falls three hundred and sixty-five days in the year, and from this we may safely infer that it must be grown with us very moist indeed.

The late Consul Lehmann collected the species near Juntas, on the Rio Dagua, at 500 to 1,000 metres elevation, and between Buenaventura and Nawanja, Cauca, from 0 to 500 metres, so that it probably has a wider range than is yet realized.

R. A. R.

EPIDENDRUM COSTATUM.

A VERY interesting *Epidendrum* has just flowered in the collection of Sir Trevor Lawrence, Bart., Burford, Dorking, which proves to be the long-lost *E. costatum*, a Mexican species, which was originally described from dried specimens (A. Rich. & Gal. in *Ann. Sc. Nat.*, ser. 3, iii. p. 21), and which afterwards flowered with Messrs. Loddiges, an inflorescence and leaf being preserved in the Lindley Herbarium, with the date "June, 1845." It bears a considerable resemblance to *E. patens* in habit, and has short pendulous racemes of crimson-purple flowers, with some yellow on the disc

of the lip. Lindley described the flowers as rich crimson, as large as in *E. nutans* (*Fol. Orch.*, *Epidendr.* p. 63). Since that time the species has been practically lost sight of, though a plant flowered from some unknown source at Kew in May, 1889, but its identity was not made out at the time. Lindley placed the species in his group *Amphiglottium holochila*, next to *E. Skinneri*, a handsome Guatemalan species which was figured in the *Botanical Magazine* many years ago (t. 3951), but which seems to have been quite lost sight of during recent years.—R.A.R.

CATASETUM SPINOSUM.

AN interesting *Catasetum* has reappeared in cultivation, in the Kew collection, a plant obtained some time ago at Messrs. Protheroe & Morris's Sale Rooms, as "*Catasetum* sp. from Brazil" proving on flowering to be the long-lost *C. spinosum*, Lindl. (*Bot. Reg.*, 1840, Misc. p. 65). It originally flowered in the same collection in February, 1840, and was described and figured by Sir William Hooker under the name of *Myanthus spinosus* (*Bot. Mag.*, t. 3202), and was said to be one of the very few *Orchideæ* which rewarded Mr. Gardner's researches in the Province of Ceara, in the interior of Brazil. Gardner wrote in his journal a very interesting and instructive note on the subject (*Ann. Nat. Hist.*, iii. p. 334). After remarking that *Cactææ* were rare in the province, and that he had only met with four species, he proceeds to say, "*Orchideæ* are still more rare. Two kinds only can I find to send home alive, but of both you will receive an abundant supply; they are the *Oncidium* already mentioned and the epiphyte that grows on the *Catole*. The latter of these I have not seen in flower, it being in a dormant leafless state at this season. The general appearance is that of a *Catasetum*, and I have no doubt it will prove to be new. The place of the tropical *Orchideæ* of South Brazil is in these regions occupied by *Loranthææ*, which, in the shape of *Viscum*, occupy every tree, and being evergreen, give a remarkable appearance to the deciduous forest." At that time *Myanthus* was thought to be a good genus, but shortly afterwards Lindley reduced the plant to *Catasetum*, as above mentioned. He, however, could not have understood the species very well, for immediately afterwards he described and figured a similar plant under the name of *C. lanciferum* (*Bot. Reg.*, 1841, t. 5, fig. 5). This he had received from the Hon. and Rev. W. Herbert. The author remarked: "It was collected by Dr. Gardner in Brazil, and is perhaps a variety of *C. barbatum*, but it is very different in its lip." It is simply a form of the preceding, and I have little doubt that the plant was one of the "abundant supply" just mentioned. It is curious that the two have not previously been connected together. Lindley himself afterwards considered *C. spinosum* to be a form of *C. barbatum*, and I had also regarded it as a variety, but the fact is that

the plant figured as *C. barbatum* var. *spinosum* (*Lindenia*, vii. p. 23, t. 298) is not identical with *C. spinosum*, Lindl., as I supposed. Cogniaux also, while adopting the same view, retains *C. lanciferum*, Lindl., as distinct. The reappearance of the plant is fortunate, for a comparison with the original materials has shown what confusion has been introduced into the history of the two species. The marked difference between the two consists in the fact that in *C. barbatum* the crest consists of a single curved horn, but in *C. spinosum* of a straight horn with a pair of diverging branches below the middle. The female flowers of the latter are not known, but may appear later, for two or three plants flowered last year, and one of them is again in bloom.

R. A. ROLFE.

MASDEVALLIA COCCINEA.

FORTY years ago this beautiful *Masdevallia* flowered for the first time in cultivation, after having been known to science for upwards of twenty years. Reichenbach then remarked: "Messrs. Veitch have been fortunate enough to flower this species, we believe for the first time in Europe." As to its habitat he observed: "This magnificent species grows on the ground on the southern slopes of the high mountains near Pamplona, at the height of 9,500 feet, and blooms in April. Its brilliant flowers resemble at a distance those of *Bejarias*, *Vacciniums*, and other plants of these lofty regions." After this interval of time it may be interesting to give his concluding remarks, which are eminently Reichenbachian:—

"Though the taste of amateurs is never to be judged beforehand, yet we believe the gorgeous flowers, shaped in a fashion not represented elsewhere in our collections, some bearing the most brilliant colours, growing no doubt as easily as poor *Pleurothallids*, will become favourites, and will be ranked among fashionable Orchids. Alas! we do not know the place of these *Masdevallias* in the modern Batemanian system of Orchids, developed partly at the meetings of the Royal Horticultural Society; we know only that of the bridal Orchids. Hence we would propose to rank *Masdevallias* under the new group of 'funny Orchids,' close to *Cycnoches*. We just now remember that one of the most eminent collectors of Orchids had a most hearty laugh as soon as he saw the flowers of his *Cycnoches chlorochilon*, *ventricosum*, *Loddigesii*; no *Vanda*, no *Aërides*, ever excited so joyous a feeling. Is it not a good thing to be put in better spirits by one's flowers these miserable foggy days, in lieu of grumbling about the last panic? And is there not a surer hope of satisfaction by investing money in 'funny Orchids' than in some modern speculation? In the one you have pleasant flowers; in the other the risk of a smash becomes your constant idea."—*Rchb. f. in Gard. Chron.*, 1868, p. 75.

ORCHIDS IN SEASON.

Two beautiful flowers are sent from the collection of Max Isaac, Esq., Wildecroft, Blundellsands, by Mr. Driver. One is given as *Cypripedium* $\times$ *Mahleræ*, derived from *C. Rothschildianum* $\times$ *C. Lawrenceanum*, and the other as *C. x tixallense*, from the reverse cross. Both contain the characters of the parents in a very effective way, and though differing in detail must be considered as forms of *C. x Mahleræ*, the earlier hybrid, which flowered for the first time ten years ago.

A flower of a pretty little hybrid from *Lælia xanthina* crossed with the pollen of *Cattleya intermedia alba* is sent from the collection of Pantia Ralli, Esq., Ashted Park, Epsom. It is a form of *Lælio-cattleya stellata*, which was described at page 149 of our last volume. The flower is yellowish white, with a rosy tinge and some darker veining on the front lobe of the lip.

A curious twin flower of *Odontoglossum crispum*, having two lips, is sent from the collection of M. Jules Hye de Crom, of Ghent (gr. M. Coen). There is an additional segment between the two lateral sepals, evidently a petal, from its position and pure white colour, but the other segments are normal, the two lateral sepals only being tinted with rose. It is said to be one of eleven flowers on the same spike, and borne by a strong, healthy plant. The column is also very broad, and it evidently represents the fusion of two flowers.

A photograph and flower of a very handsome seedling *Odontoglossum*, called *O. x crispo-Harryanum*, Gatton Park var., are sent from the collection of Sir Jeremiah Colman, Bart, Gatton Park, Reigate, by Mr. Bound. It is remarkable for its rich colour, and the exceptionally broad and handsome lip, with a clear white apex. It was raised in the collection and is at present a very small plant.



DENDROBIUM CRINIFERUM.

THE genus *Desmotrichum*, of Blume, now reduced to a section of *Dendrobium*, forms a very curious little group, which is not often seen in cultivation, one of the reasons no doubt being the fact that the flowers last only a single day, and sometimes even less than that. At all events there is the curious little *Dendrobium fugax*, described from the collection of the late Mr. John Day, of which Reichenbach remarked (*Gard. Chron.* 1871, p. 1257): "It bothered for many years both its possessor and its grower, neither of whom could, either by day or night, get to see it flowering, though they watched it with the greatest care. At length, after much trouble and anxiety, came March 14th, 1871, when J. Day, Esq., was so fortunate as to catch the fugacious flower just when it was kind enough to get open." Mr.

Day made the usual careful painting (*Orch. Draw.* xvi. t. 59), but did not record anything about those anxious vigils.

D. criniferum, on its flowering day, must be a striking thing. About a year ago a plant at Kew produced a nice crop of blooms, but no others were seen until June 20th. of this year, when about six others appeared. Three or four days previously a plant of *D. crumenatum* had produced a few flowers. The detail may be recorded, because Mr. Ridley mentions the singular fact that in Singapore *D. criniferum* "invariably opens its flowers the day before those of *D. crumenatum* expand." The flowers of *D. criniferum* are whitish, with a three-lobed lip, which breaks up in front into a fringe of long spreading yellow filaments. The species was described in 1844, by Lindley (*Bot. Reg.*, 1844, Misc. p. 41), from a plant which flowered in the collection of His Grace the Duke of Northumberland, at Syon House, and which had been received from Ceylon. It grows in Singapore, the adjacent Malayan Peninsula, Borneo, and also, according to Mr. J. J. Smith, in Java, Sumatra, and Celebes. This point may require verification, for Smith considers *D. comatum*, Lindl., and *D. Zollingerianum*, Teijsm. and Binn., as synonymous, but a specimen of the former in Lindley's Herbarium looks different. Ridley states that *D. criniferum* grows in clumps, on trees, usually near the sea, and the flowers exhale a faint odour of cowslips. He also remarks that *Desmotrichums*, like many other Malayan Orchids, have no definite flowering season, but at intervals of a few months every individual of of the same species flowers on the same day.

R. A. R.

NOTES.

Two meetings of the Royal Horticultural Society will be held at the Royal Horticultural Hall, Vincent Square, Westminster, during August, on the 4th and 18th, when the Orchid Committee will meet at the usual hour, 12 o'clock noon. The following meeting is fixed for September 1st.

The next meeting of the Manchester and North of England Orchid Society will be held at the Coal Exchange, Manchester, on August 13th. The Committee meets at noon, and the exhibits are open to inspection from 1 to 4 p.m. The following meeting will be held on September 3rd.

The two fine groups of Orchids exhibited by Messrs James Cypher & Sons and Messrs. Moore, Ltd., which gained an equal first prize for the best table of Orchids at the recent York Gala, are illustrated in the *Gardeners' Magazine* for July 11th.

A fine group of *Cattleya Schroederæ* in flower in the establishment of Messrs. Duchesne et Lanthoine, of Watermael, is illustrated in the *Revue de L'Horticulture Belge* for July 15th.

ORCHIDS AT WISLEY.—It is interesting to note that Orchids now receive some attention at the Royal Horticultural Society's garden at Wisley. In the Prospectus of Instructions for Students we find the following item:—

Cultivation of Orchids. The Orchid house contains a small representative collection of mainly intermediate and cool house Orchids.

Watering, ventilation, ripening, dividing, repotting, &c.

Hybridisation and raising of seedlings.

ORCHID PORTRAITS.

CATTLEYA × WHITEI MAGNIFICA.—*Journ. Hort.*, 1908, ii. p. 75, with fig.

CÆLOGYNE PERAKENSIS, Rolfe.—*Bot. Mag.*, t. 8203.

CYNORCHIS COMPACTA.—*Gard. Mag.*, 1908, p. 572, with fig.

DENDROBIUM AUREUM.—*Journ. Hort.*, 1908, ii. p. 3, with fig.

ODONTOGLOSSUM × AMABILE FOWLERIANUM.—*Gard. Chron.*, 1908, ii. p. 4, fig. 4.

LÆLIO-CATTLEYA CAPPEI, CHARLESWORTH'S VAR.—*Journ. Hort.*, 1908, ii. p. 51, with fig.

MASDEVALLIA TOVARENSIS (specimen plant).—*Journ. Hort.*, 1908, ii. p. 99, with fig.

ODONTOGLOSSUM × ILLUSTRE VAR. KING OF ENGLAND.—*Gard. Mag.*, 1908, p. 542, with fig.

ODONTOGLOSSUM QUEEN ALEXANDRA, VAR. CRAWSHAYANUM.—*Gard. Chron.* 1908, ii. p. 42, fig. 15.

ODONTOGLOSSUM × WILCKEANUM SCHRÆDERIANUM.—*Journ. Hort.*, 1908, ii. p. 27, with fig.

VANDA PUMILA.—*Gard. Chron.* 1908, ii. p. 43, fig. 16.

ANSWERS TO CORRESPONDENTS.

[Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An ADDRESSED postcard must be sent if a reply by post is desired (abroad, reply postcards should be used). Subjects of special interest will be dealt with in the body of the work].

J. B. The Lycaste imported with Lycaste Skinneri is L. × Luciani, a natural hybrid between the species named and L. lasioglossa.

Fl. C. The two flowers clearly represent an abnormal condition of Cattleya Mossiæ, which the "growth, leaves, and bulbs resemble entirely." The fact that the plant came out of an importation of the species is conclusive. Whether the character is permanent can only be seen when the plant becomes established, and flowers again.

H. H. Bifrenaria vitellina (not aureo-fulva), Eria convallarioides (dense-flowered), Eria sp. near concolor, and Epidendrum sp. not identified.

Numbers 15 and 17 of the useful little *One and All Gardening Books*, published by the Agricultural and Horticultural Association, 92, Long Acre, London, W.C., have reached us, the subjects being "Peas," by Horace J. Wright, and "Beans," by R. Lewis Castle. They are profusely illustrated. Price one penny.

Photographs received with thanks. W. P. B.

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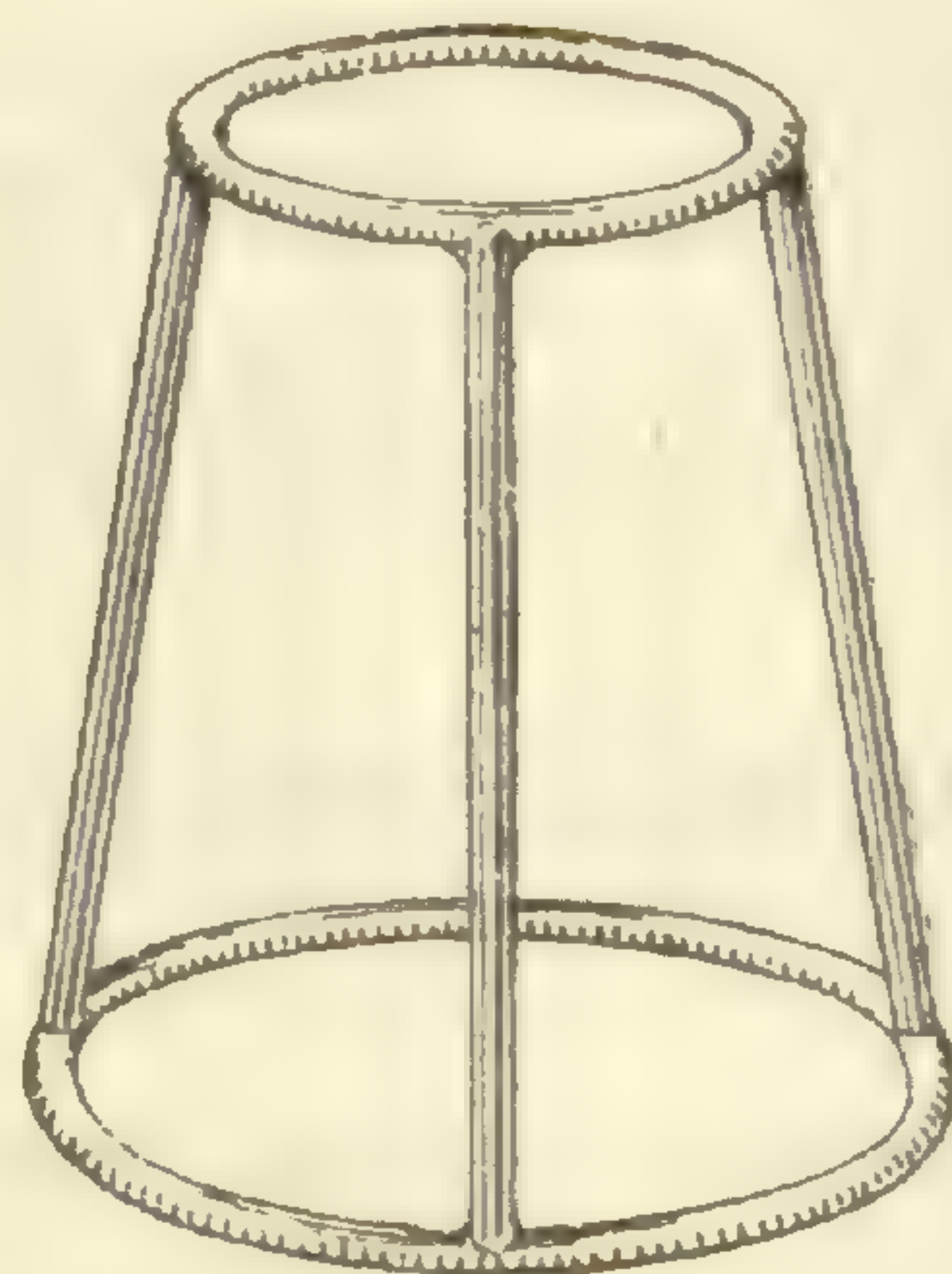
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Contents.

	PAGE		PAGE
Albinism in Orchids, Inheritance of ...	265	Lælia × Rogersii ...	264
Cypripedium insigne Sanderianum (fig. 36) ...	267	Liparis atrosanguinea ...	272
Cypripedium × Maudiaë (fig. 35) ...	266	Notes ...	287
Cypripedium × Rosetti (fig. 34) ...	265	Odontoglossums from Walton Grange ...	286
Answers to Correspondents ...	288	Orchid Portraits ...	288
Arachnanthe Rohaniana ...	264	Orchids at Glebelands, South Woodford ...	257
Calendar of Operations for September ...	268	Orchids in season ...	284
Catasetum fimbriatum ...	283	Orchis maculata ...	285
Cattleya × Claesiana ..	287	Paphiopedilum × Thalia var. Mrs. Francis Wellesley (fig. 37) ...	273
Cattleya labiata (fig. 38) ...	281	Societies ...	274
Coryanthes splendens ...	274	Manchester & North of England Orchid ...	278
Dies Orchidiani ...	261	Royal Horticultural ...	274
Hybrid records ...	264		

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Volumes I. to XV. can be supplied unbound at 6/-, or bound in cloth, 7/6, postage extra. Cost of postage: book post, 9d. per volume; parcel post within the United Kingdom only, 5d. per single volume (series by weight).

Also cases for binding either volume at 1/6 each, post free throughout the postal union.

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THE ORCHID REVIEW.

VOL. XVI.]

SEPTEMBER, 1908.

[No. 189.

ORCHIDS AT GLEBELANDS, SOUTH WOODFORD.

JULY is probably the very worst month in the year to visit a collection of Orchids, if one hopes to see a lot of them in flower, and I was not in ignorance of this fact when I set out to see the collection of J. Gurney Fowler, Esq., and therefore suffered on that score no disappointment; and, indeed, there was a considerable sprinkling of flowers throughout the houses.

This collection is too well known to require any introduction, as the annals of the R. H. S. meetings are rich in evidence of the prominent place it has long occupied among Orchid collections, and as these annals, as far as they relate to Orchids, have been carefully recorded in these pages, the name has been kept before the readers of the *Orchid Review* for a good number of years.

Mr. Fowler has gathered together here an exceptionally choice lot of Orchids, both species and hybrids; in fact, one might safely say that the latest and best of the products of the hybridist are continually being added, so that the collection is of an up-to-date character, which is quite refreshing to visit. This collection is well in the movement, and there seems no danger of its languishing from too strict an adherence to old traditions.

The Odontoglossums, which are an important part of the collection, are contained in a commodious new house, built a year or two ago. No pains have been spared to make this house as complete as possible. It measures some seventy feet long by twenty feet wide, and is twelve feet from apex to floor level, and has side and centre staging, the latter being graduated so that the plants stand an equal distance from the light. Gearing has been fitted to the top and bottom ventilators, which can thus be opened and shut expeditiously; lead piping, perforated underneath, runs along the back and front walls, which facilitates damping operations and ensures an abundance of moisture during the summer, which it would be difficult to obtain in the ordinary way, and this with a minimum amount of labour. The lath staging is built of teak wood. The fine, general healthy appearance, the increasingly progressive size of the bulbs, and the thickness and width of the

leaves form substantial proof that the house is admirably adapted for its purpose.

It is usually considered that hybrids are of easier cultivation than the species from which they are derived, and while this may be rather a moot point—a point about which I am not nearly so confident as I was a few years ago—one can observe but little difference here, and Mr. Davis thinks that the species do fully as well.

The older blotched varieties of *Odontoglossum crispum* are mostly represented, and as they are pretty well known it seems needless to mention them here. Two or three, however, which are less known, but which will be among the best when they are grown into the desired condition for flowering, are *Fowlerianum*, *Mrs. J. McBean* and *rotundum*. These have not yet been publicly exhibited.

The gloriously coloured hybrids between the genera *Odontoglossum* and *Cochlioda* are great favourites with Mr. Fowler, and he has added a good many of them to his collection. These bi-generic hybrids form now quite a lengthy series, and Orchidists can safely look forward to wonderful developments when the secondary and tertiary hybrids from them appear. I noted plants of *Odontioda Devossiana*, *O. Vuylstekeæ* var. *Kingsmillii*, *O. Charlesworthii*, and others. Some of the other hybrids of which mention might be made were *Odontoglossum* × *amabile Fowlerianum*, many selected *ardentissimum*, the extremely rare and beautiful *Smithii* (*Rossii rubescens* × *Harryano-crispum*), and the other fine *Rossii* hybrid, *Fowlerianum*, *Eurydice*, *Ossultoni*, choice varieties of *percultum*, including p. var. *J. R. Roberts*, and a long list of choice things, many of which have appeared at the meetings of the R.H.S. *Odontonia Laireseæ* (*Miltonia Warscewiczii* × *Odontoglossum crispum*) was just passing out of bloom. The choicest plants were arranged together, and occupied about one-half the side staging on one side of the house, the rest of the house being largely filled with *O. crispum*, the larger plants occupying the centre staging, where were also growing in fine condition *Oncidium macranthum*, *Odontoglossum Edwardii*, &c. The weeding out process is also being assiduously carried on, only varieties of *crispum* of good shape and substance being retained. At one end of the house a number of pots had recently been sown with seed of various crosses, and germination was then promising very well.

In an intermediate house were a fine lot of *Cypripedium insigne* in great variety. *C. insigne* is much thought of here, and they are grown extremely well. There are a large number of the yellow varieties grown, and among the larger coloured kinds the variety *J. Davis* is noteworthy. Two nice plants of *Sophrocattleya Doris* (*Sophronitis grandiflora* × *C. aurea*) were growing on a shelf in this house. By a peculiar irony of fate this hybrid, unquestionably the finest of all the hybrids yet raised from *Sophronitis*

grandiflora, has never received any recognition from the Orchid Committee of the R.H.S. But there is yet time, and it will one day achieve that distinction. Other *Sophronitis* hybrids were *Soprocattleya Saxa* (S. g. $\times$ C. *Trianae*), S.-c. *eximia*, Fowler's var. (S. g. $\times$ C. *Bowringiana*), the finest variety of this cross, and which received a First-class Certificate last December. Growing with these was a plant of *Lælia pumila alba* var. E. Ashworth, an extremely rare, pure white variety, the lip having just a faint shading of yellow in the throat. *Zygopetalum Perrenoudii superbum* and other interesting things were also growing here.

In the next division of this house were some choice *Cattleyas*, including *C. labiata alba* Princess of Wales, *C. Trianae* J. G. Fowler, *Lælio-cattleya Canhamiana alba*, *Brassocattleya Schrøderæ-Digbyana*, Fowler's var., &c., while at the end of the house, in cases, a large number of *Cattleyas* were germinating quite freely. With such an excellent choice of parent plants as the Glebelands' collection affords much should be expected here in the way of choice hybrids in the years to come.

In the house in which the warmer-growing kinds of *Cypripediums* are, many examples of good culture were noted. The *Cypripediums* are old favourites, and there are here a large number of rare and valuable plants which it would be quite impossible for me to do justice to. *C. $\times$ Lecanum* var. J. G. Fowler is doing well. The foliage of this plant is quite distinct from the foliage of the ordinary *Leeanum*, and leads one to suspect that there is more than *insigne* and *Spicerianum* in its composition. There were fine specimens of *C. $\times$ Troilus*, $\times$ J. H. Veitch, $\times$ Miss Louisa Fowler *superbum*, $\times$ *calloso-Rothschildianum* (one of them in flower), $\times$ *Chapmanii*, the choicer varieties of the variable *C. $\times$ aureum*, many fine *C. $\times$ nitens*, a plant of *C. $\times$ I'Ansoni*, Daisy Barclay, *Fowlerianum*, the fine *Æson giganteum* (two or three plants), Mrs. Wm. Mostyn, F. K. Sander, *Actæus* Fowler's var., the albinos, and numberless other fine *Cypripediums*. A number of home-raised seedlings of good promise were Mrs. Wm. Mostyn crossed with *Lawrenceanum*, a fine dark var. A plant of the rare *Phaius mishmiensis* was growing well in this house.

The next house might be described as cool-intermediate, and was largely filled with *Cymbidiums*, which include the later introductions, among which was the *C. insigne* Glebeland's var. A considerable batch of *Miltonia vexillaria* were doing exceedingly well with these.

In a lean-to house the *Lælia anceps* were growing suspended. Here again we find a good collection of these beautiful *Lælias*, which have been rather neglected of late years. The plants here were doing well, their position, close up to the light, suiting them. In the next and hotter division of this house were the *Dendrobiums*. The selection is a good one, and, like other choice collections of *Dendrobiums*, they are mostly of hybrid

origin. The remarkable *Dendrobium Wardianum Fowlerianum*, which has peloriate markings on the lateral sepals, making them resemble the lip, appeared as long ago as 1902, but Mr. Davis has not so far succeeded in propagating it from the nodes, which seems to be the only way to keep a stock of *Dendrobes* vigorous. It is to be hoped that he will yet succeed.

The back wall of this lean-to house is covered with *Epidendrum radicans* and its hybrids *E. × Boundii* and *O'Brienianum*, for which purpose they are admirably suited. The idea is worth carrying out wherever there is a bare wall to cover. A trough has been run along the base of the wall, well drained, and in this have been planted the reed-like growths of the *Epidendrums*, which have grown luxuriantly. Mr. Davis also finds that the moss bed in which the *Epidendrums* are growing is an excellent place on which to lay the back bulbs of *Cattleyas*, &c., where they break very readily.

In the first *Cattleya* house a few *C. Mendelii* were still in flower, one a good dark variety of fine shape. A fine specimen of *Brassocattleya gigas-Digbyana* with four leads, and a remarkable specimen of the white *Cattleya gigas* Frau Melanie Beyrodt having fourteen leads, were noted. A plant of *Lælia tenebrosa* Waltham Grange var. with two leads has done well. This fine yellow variety has given cultivators a good deal of trouble, but no difficulty has been experienced here. *Arachnanthe Rohaniana* was doing well in this house.

In the second *Cattleya* house are most of the *Cattleya* and *Læliocattleya* hybrids. Mr. Fowler has acquired many of the best that have flowered from various sources, a large proportion of them being certificated plants. One of the very prettiest is *C. × Rosa Leeman* (*C. amethystoglossa* × *C. aurea*), a painting of which was shown me. *Brassolælia × purpurata-Digbyana* var. King Edward VII. is now a good many years old, but it is perhaps the best of that cross that has yet been raised. *L.-c. Fowleri* (*C. Schroederæ aurantiaca* × *B.-l. Mrs. Gratrix*), a secondary *L. cinnabarina* hybrid, is wonderfully tinted.

I am conscious of being able to do but scant justice to the fine collection of Orchids which Mr. Fowler has formed at Glebelands. It is difficult to pick out a few plants for special mention, where there are so many, without seeming to do the unmentioned ones an injury. Mr. Fowler is to be congratulated on his many fine acquisitions, and the generally prosperous condition of his collection.

Besides Orchids there are many things to appeal to the general gardener: the roses, the fine collection of *Selaginella*, the fruit, all would repay a visit, even if the visitor was a sufferer from *Orchidophobia*, a disease which could hardly survive an afternoon spent at Glebelands.

Mr. J. Davis, head gardener, has the Orchids directly under his charge,

and although the other departments of the garden make big demands upon his time he has got the Orchids in a good thriving condition, clean and well set up.

J. M. BLACK.

DIES ORCHIDIANI.

I AM indebted to some friend for a newspaper cutting—a “snipping,” he irreverently terms it—which he says has been written by an eminent professor of natural history under the title of “Science from an Easy Chair,” and as it relates to Orchids, he thinks I may like to see it. The eminent Professor describes how an “admirable story teller” has made “legitimate use of scientific possibilities in imagining the existence of a rare tropical Orchid which attracts large animals to it by its wonderful odour. The effects of the perfume are narcotising; the animal, having sniffed at the Orchid, drops insensible at the foot of the tree trunk on which the Orchid grows. Then the Orchid rapidly, and with animal-like celerity, sends forth those smooth green fingers or “suckers” which you may see clinging to the pots and shelves on which an Orchid is growing. As they slowly creep, in their growth, over the poisoned animal, they absorb its life’s blood painlessly, and without disturbing the death slumber of the victim.”

He then goes into detail as to how a retired official with feeble health and a passion for Orchids purchased an unknown specimen, which, after some months of nursing, is about to blossom in the little hot-house of his suburban home. “He goes quietly and alone one afternoon, when his housekeeper is preparing his tea, to enjoy the first sight and smell of the unknown flower, and is found, some three hours later, lying insensible before the Orchid, which is giving out an intoxicating odour, and is looking very vigorous and wicked. It has a reddish brown tint pervading its leaves and stalks, and has already pushed some of its finger-like shoots round the Orchid-lover’s neck and beneath his shirt front. When they are pulled away a few drops of blood continue to flow from the skin where the absorbent shoots had applied themselves.”

The story, which was becoming quite interesting, now abruptly ends with “The Victim Recovers.” Not a word as to his feelings, or as to the subsequent history of that wonderful specimen. But perhaps I can give a few additional details, at all events the story seems familiar, and those who care to look up an earlier article (*O.R.*, iv. pp. 292-293) may be able to follow the argument.

This reminds me that the story of the wonderful scarlet *Phalænopsis* was never fully cleared up. It was never explained why the plant was not

introduced. I wonder whether the following furnishes the clue. It has just appeared under the heading of "The Tale of the Scarlet Butterflies."

But what have scarlet butterflies got to do with Orchids? the reader may ask. Let the author explain:—"There are Orchids that imitate birds, reptiles, insects in plenty, but there is no Orchid, save the one discovered thus accidentally by the Sea-Queen, that you simply cannot tell from a living scarlet butterfly of huge size until you touch it. Perhaps the English Bee-Orchid, not known to very many, is the nearest parallel."

Now the Bee-Orchid we know, and we naturally want to hear something about the other, so let us proceed:—"Each butterfly was as big as a sparrow; all had shining dark-eye spots on their brilliant wings, setting off the pure scarlet of their hue, and somewhere about the head of every one trembled long, spiral, horn-like antennæ, of a crimson as bright as the wings."

Now the Sea-Queen was wearing "a white dress, full, soft and fleeting, on which a swarm of marvellous scarlet butterflies seemed to have settled. They quivered on the round of the shoulder like crimson epaulets, they perched upon the hem, they fluttered up the skirt in long loose trails, they gathered on the bosom in splendid knots, they lay like red light of sunset among the massy black waves of her hair. . . . What, and whence, were those strange and lovely insects? Were they alive or dead? And where, in the name of all probabilities, had she contrived to get them?"

But I am forgetting to explain the situation. It is an island in the Pacific, "Motua," a place with a Resident Commissioner or Chief Magistrate, "who kept as much state as many full-blown governors," and he was now giving a sort of dinner party, with the Sea Queen as one of the guests. "He stood upon the steps of his own wide, green shaded verandah, and welcomed the visitors as they came in." But one came not, and the dinner could not wait. At length—they had got past the dessert—she appears. "Her toilette!"—but that we have seen, and have already guessed why she was so late. The event made a stir, of course, and the Resident Magistrate, being "very anxious to know what the decoration was," went over to her, and "asked her point blank what on earth she had got hold of."

" 'There aren't any butterflies of that sort in the Pacific that ever I—' he was beginning, when he stopped"—

" 'Orchids!' he fairly yelled."

All of which was very rude! But then there are "two men in the Pacific who know everything about Orchids," and the Resident Magistrate was one of them, so we must make excuses for his excitement, especially as

“a new Orchid may be worth its weight not in gold, but in diamonds. And this was the newest of the new.” No wonder the Magistrate fairly “gasped,” . . . “his hands quivering over the flowers with eagerness to handle them.”

The lady “courteously detached one or two, and gave them to him, explaining that they were the flowers of something she had taken for a small yam, that grew on one spot of Iorana, and one only. She had all the roots dug up, and put in one of the cabins, and they had flowered during the voyage unexpectedly.” The Magistrate drew a long breath, and to cut a long story short, surprised the lady by informing her that she was worth, as she stood, some ten thousand pounds. “What a find!” The lady’s husband was severely practical, and at once entered into a discussion as to the best means of selling the roots, and the best price to be obtained, while the Magistrate agreed to come down to the ship in the morning to see the roots, and decide about their disposal.

The reader has now gathered that the party reached the island in a yacht, and thither they returned after the dinner party, with new ideas about those wonderful scarlet butterflies, and the fortune that had suddenly fallen into their hands.” “The cabin ports of the Sybil shone out in unwonted light” as they approached, and there were sounds of revelry. Evidently there was a party on board too, for which permission had not been given. “It may have been second sight or it may not,” but they ran. “The cabin was full of chiefs—Motua chiefs,” and “some were leaning, stupid and half senseless, across the narrow table.” On it were “the remains, in two or three plates, of the roots from the cabin—the roots worth their weight in diamonds”—the roots that were to have “opened the gate of fortune”—“the roots that had come from far Iorana, and that were nowhere else in the known world to be obtained. Not even on Iorana could they be had now, for every one had been taken away. And the Motuan Chiefs had—eaten them.”

Now don’t imagine that the condition the chiefs were in was the result of spirits. “The white pig of a cook had drunk all the spirits before they got on board.” It was the effect of eating those yams. “Now they were one and all suffering from the results. . . . They did not know the hypnotic influence of the strange root on which they had supped.”

This is not quite all, but here we may leave the subject, for the rest concerns the chiefs rather than the Orchid. But was this the scarlet *Phalænopsis*? I cannot say, but I should like to hear the views of the eminent Professor on the subject.

ARGUS.

HYBRID RECORDS.

WE have repeatedly urged the necessity of full and exact statements in recording the parentage of hybrids, and the following correspondence may be interesting and instructive:—

“Dear Mr. Editor, Mr. ——— wishes me to send you the enclosed hybrid derived from ——— and ———, which he has named ———.”

On opening the box it was immediately seen that while the first parent was obviously correct the other was as certainly wrong. We therefore enquired if the plant was raised in the collection, whether the record was beyond question, and what the pseudobulbs and leaves were like.

The answer duly arrived:—“The plant was not raised in the collection, but was bought from ——— of ———, and therefore not to be relied upon. The pseudobulbs are all double-leaved, and we agree now that it must have some other parent than ———, so I suppose the name will have to be dropped.” But suppose we had unquestioningly put the name and the alleged facts upon record?

 ARACHNANTHE ROHANIANA.

I SHOWED a plant of *Arachnanthe Rohaniana* on the 15th October, 1907, at a meeting of the Royal Horticultural Society, and obtained a First-class Certificate for it. On the 17th October I self-fertilised the plant in four different ways, pollinating a yellow flower with a brown, a brown with a yellow, a yellow with a yellow, and a brown with a brown. Four seed pods formed, of, so far as I could judge, exactly the same size. They were ripe on the 12th June, 1908, and taken from the plant. I sowed them on the 3rd July, and of the four lots of seed sown, of course in separate seed pans, only one germinated, and that was a yellow with a yellow. These were pricked off on the 7th August, and at present I have several very nice seedlings looking well.

This suggests, although of course it is not a certain proof, that the brown flowers are unfertile, and that the yellow flowers only are seed-bearing when crossed with yellow.

J. GURNEY FOWLER.

“Glebelands,” South Woodford, Essex.

[Those brown flowers must have some use.—ED.]

LÆLIA × ROGERSII.—Mr. Rogers writes to point out that the parentage of *Lælia* × *Rogersii* described at page 248, is *L. Dayana* × *Cowanii*, the latter being the pollen parent. This information had not arrived when the note was written, hence the remark “*L. Cowanii* and *L. Dayana*.”

INHERITANCE OF ALBINISM IN ORCHIDS.

ANOTHER very important contribution to this subject has just been made. On August 18th an Award of Merit was given to *Cypripedium* × *Rosetti* (*C. insigne* *Sanderianum* × *Maudiaë*), exhibited by Lt.-Col. G. L. Holford, of Westonbirt, Tetbury, a beautiful bright yellow flower with some green veining on the dorsal sepal, and the upper third white. The flower has been kindly sent by Mr. Alexander, and is represented two-thirds natural size in the annexed figure, which is reproduced from a photograph taken by Mr. F. W. Rolfe. The two parents are given overleaf. Mr. Alexander writes:—

“I am sure you will like to see the flower of *Cypripedium* × *Rosetti*,



Fig. 34. *CYPRIPEDIUM* × *ROSETTI*.

after your interesting article on ‘Inheritance of Albinism in Orchids’ (pp. 228-230). The parentage is *C. insigne* *Sanderianum* × *Maudiaë*. We have a batch of seedlings, out of which about sixteen plants have flowered and not one has shown any trace of colour. In size and shape the majority take after the seed-parent, the one exhibited last Tuesday being the largest and best. The cross previously mentioned, *C. insigne* *Sanderæ* × *Maudiaë*, was also raised here in 1901, and flowered in due course, and all came coloured, like those raised by Mr. Cookson. The other cross was raised in 1905, and as it has yielded true albinos, does not this fact ‘throw *insigne*

Sanderæ overboard,' as 'not a pure albino.' I have always looked upon the variety Sanderianum as the pure albino of the species, all other varieties having more or less trace of colouring in them. Sanderæ is undoubtedly the best yellow form, but I have never seen a flower without a few coloured specks or pin-like brown dots at the base of the dorsal sepal, and flowers of this variety produced by strong vigorous plants, grown cool, have nearly always more spots, which are then more prominent. It is rather curious that *C. insigne* Sanderæ self-fertilised should maintain its character but when crossed revert, whilst *Cattleya Mossiæ* Reineckeana $\times$ *Brassavola Digbyana* produces pure albino hybrids. This



Fig. 35. *CYPRIPEDIUM* $\times$ *MAUDIÆ*.

has occurred here, and the Reineckeana used was one having a rich dark lip. It is an interesting subject, and I hope to have your further opinion."

The flower sent is very beautiful, without a speck or shade of brown anywhere. It is clear shining yellow, with the usual slight greenish tinge, while the dorsal sepal is lined with emerald green, except at the sides and the white apex. The dorsal sepal is slightly concave, and its diameter is nearly $2\frac{1}{2}$ inches, while the flower measures over $5\frac{1}{4}$ inches from tip to tip of the petals. In other respects the figure speaks for itself.

The success of Mr. Alexander's experiment is as welcome as it is surprising, and suggests that *C. insigne* Sanderæ and *C. i.* Sanderianum are

far more distinct than would appear from their characters. Of course the presence of minute spots on the dorsal sepal of the former has long been known. Over fourteen years ago it was described as "a light yellow variety in which only the very faintest trace of spotting remains" (*O.R.* ii. p. 41, fig. 51), and these obscure spots can be seen in the figure. *C. i. Sanderianum* had just previously been described as "unspotted" (*O.R.* i. p. 145, fig. 17). We have seen that the former when crossed with the albino *C. × Maudiaë* reverts to a coloured form, also when crossed with the albino parents of the same (*C. callosum* Sanderæ and *C. Lawrenceanum*



Fig. 36. *CYPRIPEDIUM INSIGNE SANDERIANUM*.

Hye anum), and partially so when crossed with *C. bellatulum album*. It now appears that *C. i. Sanderianum* when crossed with *C. × Maudiaë* behaves as a true albino, and such we may consider it to be. This should bring the variety into favour as a parent, and the other albinos mentioned may now be crossed with it with some confidence. *C. i. Sanderæ* is clearly not a pure albino, but its colour resemblance to *C. i. Sanderianum* only makes its erratic behaviour as a parent the more surprising. Self-fertilised it retains its character: crossed with an albino it not only loses

its character, but swamps that of the other, giving such a result as might have been expected if typical forms of the species had been used. The crossing of a pure albino with one in which the purple colour is only present in minute quantities should not be the same as when the ordinary coloured forms of both species are used, and the phrase about throwing *C. insigne Sanderæ* overboard was only used in this connection (see p. 142).

The problem now seems to be why *C. insigne Sanderæ* when self-fertilised does not revert to an ordinary coloured *insigne*. The colour is clearly there, even if only in minute quantities, and it seems to require the influence of *C. × Maudiaë* to bring it out, and yet *C. × Maudiaë*, as already shown, is not a colour bearer. The inference is that the difference lies in their action upon each other when combined. The two have a different ancestry, and a different course of development, producing when combined an inharmonious blending, and a struggle for supremacy, accompanied by a certain amount of reversion. This, of course, is equally the case when *C. insigne Sanderianum* is crossed with *C. × Maudiaë*. The result in either case is a hybrid, a kind of compromise between two divergent courses of development, but in the latter case we may perhaps assume that the absence of colour from both parents leaves no material to work upon, and any reversion would manifest itself in some other direction. It would now be interesting to compare the home-raised *C. insigne Sanderæ* with the wild original, to see if any kind of discrepancy can be detected.

We know the hybrid raised from the albino *Cattleya Mossiæ Wageri* × *Brassavola Digbyana* (*O.R.* xiv. p. 339), and it is curious if *C. M. Reineckiana* × *B. Digbyana* gives a similar result. We should like to see a flower. It would be interesting to self-fertilise it, to see if reversion or dissociation takes place, and the remark applies equally to the cases previously mentioned. An interesting problem evidently awaits solution. Continued experiment will probably throw more light on the subject and it seems particularly desirable to test the constancy of some of the supposed reversions.

R. A. R.

CALENDAR OF OPERATIONS FOR SEPTEMBER.

By W. J. MORGAN, Rann Lea Gardens, Rainhill, Lancs.

SHADING should all be removed by the end of September, and the glass washed outside and inside to admit all the light possible. Where canvas blinds are used they will be better taken off the houses, and well dried and stored away for the winter, as frost and rain soon rots them. Where the lath blinds (or bamboo blinds) are used they will be found very useful as a protection from frost. We run ours out every night from September till April, and find it makes a considerable difference to the coal bill, and we do

not get worried with thrip, as the pipes do not need to get very hot, even in severe weather, and in case of a snowstorm coming on they act as a blanket, and the temperatures will be found correct in the morning instead of being down to 40°, as is often the case without blinds.

Now that the potting season is practically over, and the busy season past, the houses should be washed down inside, the stages scrubbed, the pots washed, and the plants sponged. In re-staging, plants that are a distance off the glass will be better stood on inverted pots, to get them as near the glass as possible. It allows a free circulation of air and keeps the plants hard. Any old pots or pans will do that have got cracked in use, or hard pots that were not useable for potting. They should all be washed before being used, or if the stage is a moveable one an extra brick or pot put under the bearers will do instead of using pots to stand each plant on.

WATERING AND DAMPING.—More care will have to be exercised in watering now the days are getting shorter. Plants that are resting will require very little water, but growing plants should still have an ample supply. Do not allow any plants to shrivel for want of water, whether growing or resting, as it does harm instead of ripening them, as so many imagine.

I have been asked several times what quantity of moisture is necessary for an Orchid house. This is a question which cannot easily be answered as places vary so much, the style of house, the heating arrangements, and a dozen other differences can be found, so that no hard and fast rule can be given. Several have asked me to give the moisture by hygrometer, but here again the same difficulties arise. My experience is that Orchids cannot be grown entirely by hygrometers. Outside conditions often interfere. Some houses are situated in a bleak position; some are situated on a dry soil, others on a wet and damp soil. The only way I find is to study both plants and house. Take Cattleyas and Dendrobies. If too much moisture is being given, they will soon show black spots on the foliage, and then the moisture must be gradually reduced until no more appears, and the happy medium is found, as if kept too dry they will become infested with scale, thrip, and red spider.

With *Cypripediums* it is rather a difficult job to get enough moisture to keep thrip down and at the same time not damp any leaves off. Nearly all the stove houses are the same. *Phalænopsis*, *Phaius* and *Cœlogyne pandurata* will soon spot if the house is overcharged with moisture, yet if kept too dry they get red spider and thrip.

Our method here is to get our temperatures correct before damping. Take a Cattleya house, for instance. If the temperature is down to 55° when the normal should be 65°, we do not damp till it rises to 65°, and we find this a very satisfactory way. We do not allow our temperatures to

drop below the normal required if it can be avoided, and I prefer to be a little above than below the normal. Then we are always safe to damp down twice, and often three times a day, even in winter time. I do not mean to say that this is advisable everywhere. I give this as our method, which we find acts first rate here. It is worth a trial where difficulty is found with winter moisture in houses, but mind that the temperatures are correct before trying it.

We find that firing is the most important thing during winter. Keep the fires in hand, and then a little top ventilation can be put on during the middle of the day. A little fresh air, even on a frosty day, does a lot of good, if the houses are warm enough—not a lot, just half an inch for an hour will take all the stagnant moisture out. The pipes need not be red hot, just two or three degrees above what is required, then shut the houses up and damp round, and there will be a fresh atmosphere, as nearly like that after a storm in summer as it is possible to get it artificially.

On all fine days we syringe lightly overhead, and find this assists greatly in keeping down thrip, &c. It is also much cheaper than insecticides, and much better for the plants. Do not give the plants a drowning, but spray them. It will also save a lot of sponging, and is far better than watering plants as soon as they look a little dry. But do not forget you are doing it in winter time, and remember that you have fires to attend to, for you are not depending on the sun.

One hears a lot about growing Orchids naturally, but a lot of the Orchids grown now are home raised, and the question is what is natural for home raised plants? Should they be treated as imported plants used to be, or as ordinary stove or greenhouse plants whatever the temperature they require? I find they do much better treated more like other plants, and sprayed on every fine day, as we do our stove and other plants—not enough to make a lot of difference to the moisture of the compost they are potted in, but enough to keep the leaves clean and healthy. If they are given a little ventilation on every favourable occasion, one will not be troubled with spot or yellow thrip, and there is very little danger of leaves damping off if a little care is taken to keep the temperatures right. Keep a little higher rather than below the required figure, then everything will go right. Never syringe with a falling temperature, and always allow it to rise a little after ventilating, but do not rush the heat—keep it as even as possible, and then thrip and red spider will not be any trouble.

SEEDLINGS that were pricked off earlier in the season will now be ready for potting into single pots. Care must be taken not to break the roots, or they will damp off. I prefer to pot into small single pots as soon as they commence to make a good root, as it saves breaking the roots again. Chop the potting mixture up small, so as not to have lumps in the pots which

water cannot penetrate. Place them in a light position, and keep them warm and moist, then no difficulty will be experienced in establishing them. Do not rest seedlings of any sort, but grow them on until they become strong enough to flower.

CATTLEYSAS that have made up their growth should be sorted out from those that are still growing, and staged by themselves at one end of the house, where they can be given extra ventilation, and a little less moisture. If the grower is lucky enough to possess two houses, they can be still better handled. The autumn-flowering section will be pushing up their flower spikes, and should be given every encouragement to produce fine flowers. As soon as the spikes are above the sheath they should be staked up, to prevent them from getting broken. Slugs and cockroaches should be trapped, or they will soon play havoc among Cattleya buds. A little arsenic and treacle placed on small pieces of glass will be found a good thing to clear out cockroaches, but care must, of course, be taken in using this mixture. A few lettuce leaves will make a good trap for slugs, especially if looked over with a lantern after dark.

CYPRIPEDIUMS will be pushing up their spikes very rapidly now, and should be staked neatly to give the flowers every chance to expand. Cypripediums do not, as a rule, get bothered with slugs or cockroaches; thrip seems to be their greatest enemy. They should not be allowed to become dry at any time, or small flowers will be the result. When in flower, if a little care is taken not to let moisture condense on the flowers, they will last in perfection for two to three months, and make a fine show when tastefully staged with maidenhair fern.

ONCIDIUM varicosum, crispum, Forbesii, &c., will also be pushing up their flower spikes. Slugs are particularly fond of these spikes, so they must be carefully watched, for a piece of cotton wool wound round the spikes at the base will help to keep them off. This is a beautiful class of Orchid, and worth a little extra trouble, as they make a very fine show in the duller months of the year, and every spike is of value for grouping.

ODONTOGLOSSUMS that have been newly potted should be sprayed overhead, and syringed between the pots, to keep the bulbs plump, and get the plants re-established. It will also keep the potting compost in a good condition for rooting into without constantly watering the plants, which is often a cause of the young roots dying off, and instead of the plants improving with repotting they go back, and the potting mixture gets the blame instead of the watering pot, or the grower.

TEMPERATURES will have to be closely watched, as we may expect frosts at any time from now, and carelessness in firing will often spoil a summer's work. Where blinds can be used they should be run out as an extra precaution. It only takes a few minutes to run out a lot of blinds, and will

well repay the little trouble by keeping temperatures even. For the next month they should run about as follows, allowing 5° to 10° rise for a sunny day:—

Stove or East Indian house: Night 70° ; day, 75° .

Cattleya house: Night, 65° ; day, 70° .

Intermediate house: Night, 60° ; day, 65° .

Cool house: Night, 55° ; day, 60° .

These are fire heat temperatures, without sun heat; night temperatures at 10 p.m., and day temperatures at 12 noon. I mention this as I have been repeatedly asked at what time the temperatures should be as given in the Calendar.

LIPARIS ATROSANGUINEA.

IF April, 1906, a striking species of *Liparis* from the collection of H. T. Pitt, Esq., Rosslyn, Stamford Hill, was exhibited at a meeting of the R. H. S., under the name of *Liparis tabularis*, and was noted as having a spike of maroon flowers, with a large rounded denticulate lip (*O.R.* xiv. p. 148). A plant was presented to Kew, and flowered there in June, 1907, and as it was not identified with anything else a description and drawing were made. In answer to an application for the habitat, Mr. Pitt replied that the plant was obtained from Mr. H. A. Tracy, of Twickenham, without any record, and a letter to Mr. Tracy elicited the information that he obtained it from Mr. C. Curtis, of the Forest Department, Penang. It was then described (*Kew Bull.* 1908, p. 68); and subsequently figured (*Bot. Mag.* t. 8195). When the figure appeared, Mr. Ridley, Director of the Singapore Botanic Garden, wrote to say that the plant was a co-type of his *Liparis atrosanguinea* (*Journ. As. Soc., Str. Br.* xxxix. p. 71), and grows at 4,000 feet altitude in the Thaiping Hills, Perak, where Curtis got it in company with Mr. Derry. The apparent mystery of its appearance in England without a specific name was afterwards explained by Mr. Ridley by the suggestion that it might have been sent home by Curtis before it had a name, which was given as soon as it flowered there in 1903. In any case someone gave it a new name, and as *L. atrosanguinea* was not represented at Kew the mistake escaped detection, but it now seems desirable to put the matter straight. Ridley considers it to be a near ally of his *L. venosa*, a native of the same district, which itself is closely allied to *L. tricallosa*, Rchb. f. (*Bot. Mag.* t. 7804), a species introduced from Borneo, by Mr. Bull, about thirty years ago. From both, however, it differs very markedly in the colour of the flowers, and in some details of structure.

Liparis is a very large genus, which is widely diffused throughout the warmer regions of the globe, and includes one British representative, but very few are showy enough for general cultivation.

R. A. R.

PAPHIOPEDILUM × THALIA VAR. MRS. F. WELLESLEY.

THE annexed figure represents the very beautiful Paphiopedilum or Cypripedium × Thalia var. Mrs. Francis Wellesley, formerly in the collection of Francis Wellesley, Esq., Westfield, Woking, the block, prepared from Mr. Lamont's painting, having been kindly sent by Mr.

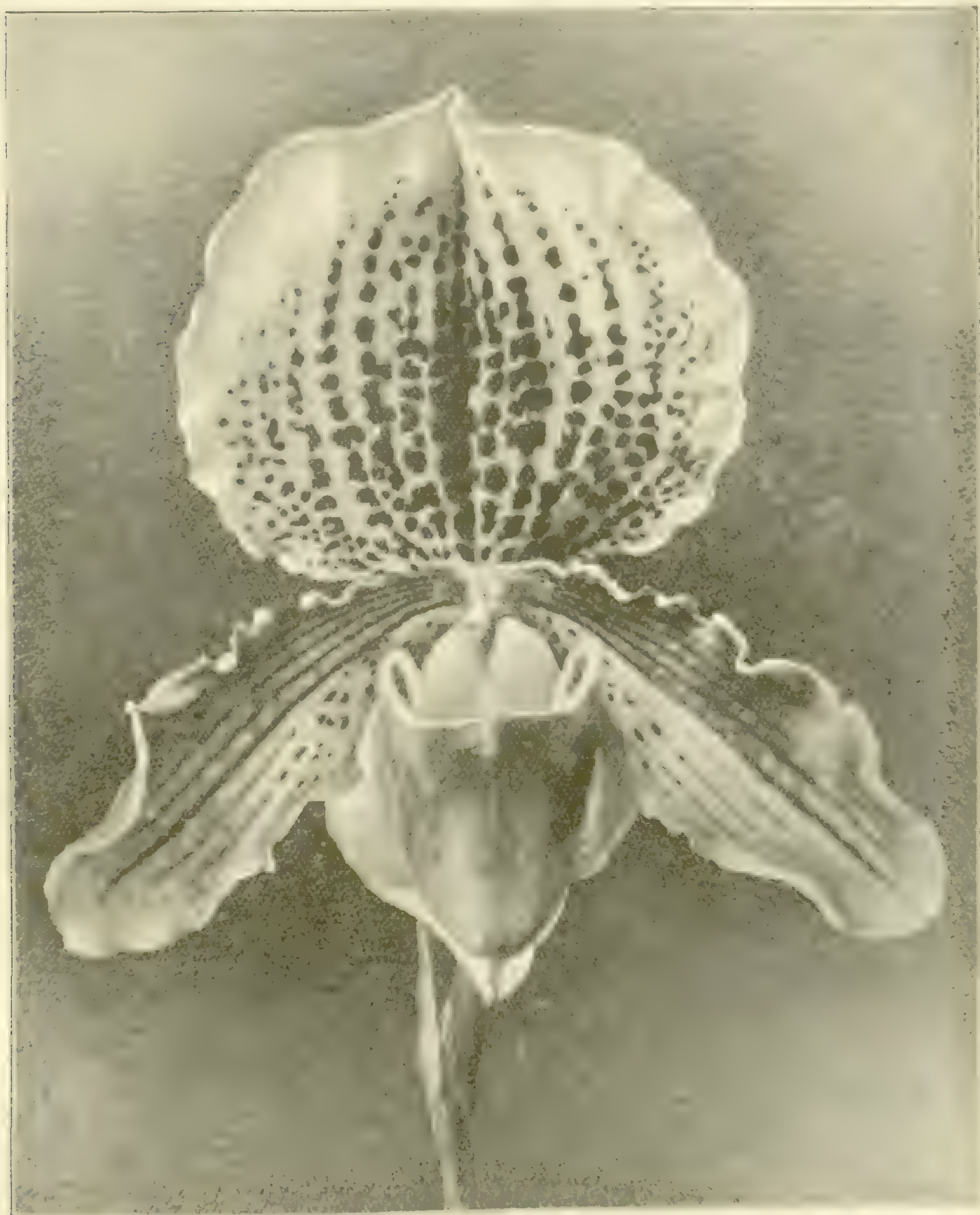


Fig. 37. PAPHIOPEDILUM × THALIA VAR. MRS. FRANCIS WELLESLEY.

Wellesley for the purpose. The plant received a First-class Certificate from the R.H.S. on December 19th, 1905 (*O.R.* xiv., pp. 13, 28), and a year later it gained the First Diploma for the best *C. Fairrieanum* hybrid. It is a superb variety, being excellent in both shape and colour. The

dorsal sepal is very handsomely blotched, and the petals and lip marked with crimson-purple. At a sale of duplicates from the Westfield Collection held in April, 1907, a small healthy piece of it fetched 120 guineas, and a year later the remaining plant was sold for 125 guineas. Mr. Wellesley remarks that in May, 1906, a small plant of it sold at Frotheroe and Morris' Rooms for the record price of £300. P. × Thalia was originally raised by Messrs. James Veitch and Sons, from P. insigne Chantinii ♀ and P. × Baron Schröder ♂. Its history was given at page 107 of our thirteenth volume.

CORYANTHES SPLENDENS.

A HANDSOME *Coryanthes* has just flowered in the collection of E. Rogerson, Esq., of Didsbury, and a flower has been sent by Mr. Price, who states that the plant was brought from Brazil last May. It agrees with *C. splendens*, which was described by Rodrigues, in 1877 (*Gen. et Sp. Orch. nov.* i. p. 103), as a species growing on the branches of trees, sometimes intermixed with Aroids, in the province of Para. A drawing was made, a copy of which, through Prof. Cogniaux's kindness, is now at Kew, and which looks like an exceptionally richly coloured variety of *C. maculata*, Hook., and as such it has since been considered (Cogn. in *Mart. Fl. Bras.*, iii. pt. 5, p. 513, t. 97). It is most like the Venezuelan *C. Albertiana*, Karst., which is also now considered a variety of *C. maculata*. This species was originally described and figured in 1831 (*Bot. Mag.* t. 3102), from plants received from British Guiana, but it has since been found in Central America, and elsewhere. The flower sent is very closely spotted with reddish purple on the sepals and petals, while the lip bears numerous large blotches of the same colour.

R. A. R.

SOCIETIES.

ROYAL HORTICULTURAL.

A MEETING of this Society was held at the Royal Horticultural Hall, Vincent Square, Westminster, on August 4th, the day after Bank Holiday, when the exhibits were not numerous and the visitors very few. Some fine Orchids, however, were staged, and the awards consisted of three medals, one First-class Certificate, one Award of Merit, one Botanical Certificate, and one Cultural Commendation.

R. G. Thwaites, Esq., Chessington, Streatham (gr. Mr. Black), received a First-class Certificate for *Soprocattleya warnhamiensis* var. J. M. Black (*C. amethystoglossa* × *S. grandiflora*), a very beautiful variety, bearing a large deep crimson flower, shaded with claret, and a three-lobed lip, with the front lobe ruby red, the side lobes streaked with red, and the disc yellow. He also sent the chaste white *Cattleya superba alba*, Odonto-

glossum $\times$ Thwaitesii (Harryanum $\times$ ardentissimum), and two plants of the brilliant new *Odontioda Thwaitesii*, which was described at page 247.

J. Bradshaw, Esq., The Grange, Southgate (gr. Mr. Whitelegge), received a Cultural Commendation for a fine plant of *Lycaste tricolor albens*, bearing 29 flowers, with the sepals green and the petals and lip nearly white. A well-bloomed plant of the type was also shown.

Sir Trevor Lawrence, Bart., K.C.V.O., Burford, Dorking (gr. Mr. White), received a Botanical Certificate for *Listrostachys Whytei*, a pretty species from Uganda, and allied to *L. Chailluana*.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. Day), showed *Cattleya* $\times$ *Atalanta Goodsonæ*, and *Brassocattleya Pluto*, Fairlawn var.

Messrs. Sander & Sons, St. Albans, staged a very interesting group, to which a Silver Flora Medal was awarded. It contained a nice batch of *Cypripedium Godefroyæ leucochilum*, the handsome *C. $\times$ Mars* (*Jo grande* $\times$ *Rothschildianum*), and several other *C. Rothschildianum* crosses, a nice plant of the pretty scarlet *Lælia monophylla* with nine flowers, *Dendrobium bellatulum*, *Galeandra lacustris*, *Pescatorea cerina*, *Sarcanthus Williamsoni*, *Epidendrum campylostalix*, *E. rigidum*, and *Eria acervata*. An Award of Merit was given to *Vanda* $\times$ *amœna Sanderæ*, an interesting and beautiful plant, supposed to be a natural hybrid between *V. cœrulea* and *V. Roxburghii*. The plant bore a strong inflorescence of large flowers, with cream-white ground colour reticulated with lilac, and the lip violet-purple with small diverging apical lobes.

Messrs. Armstrong & Brown, Tunbridge Wells, also received a Silver Flora Medal for a choice group, including *Cypripedium* $\times$ *callo-Rothschildianum*, *Orchidhurst* var., a very handsome hybrid bearing two fine spikes of flowers, *C. $\times$ Patrocinii* (*Mastersianum* $\times$ *Gowerianum*), a very fine thing, *C. $\times$ Bella*, *Westfield* var., *C. $\times$ vexillarium*, and a very pretty hybrid between it and *C. Argus*, *C. glaucophyllum*, *C. niveum*, a fine *C. $\times$ Maudiaë*, *Cattleya Warscewiczii Sanderiana*, two plants of *Bulbophyllum Dearei*, a fine example of *Platyclinis filiformis*, and other interesting things.

M. Mertens, Mont St. Amand, Ghent, received a Silver Banksian Medal for a nice group of hybrid *Odontoglossums*, including forms of *O. $\times$ amabile*, *O. $\times$ Wiganianum*, *O. $\times$ percultum*, and a supposed hybrid between *O. Hallii* and *O. $\times$ ardentissimum*, having white flowers spotted with deep claret colour.

M. Otto Beyrodt, Marienfelde, Berlin, showed *Cattleya* $\times$ *Harold* var. *Hildegard* (*Gaskelliana alba* $\times$ *Warscewiczii* var. *Frau Melanie Beyrodt*), a beautiful white flower, with the front of the lip rosy mauve.

Mr. James Douglas, Great Bookham, sent the pretty little *Listrostachys forcipata*, with equitant leaves and pellucid white flowers.

The Report of the Scientific Committee for this date contains the following :—

LISTROSTACHYS FORCIPATA.—Mr. Douglas, V.M.H., showed a plant of this rare and beautiful little Orchid, bearing several of its curious and delicate white flowers, the perianth of which is apparently but one cell in thickness. The plant is a native of dense forests in Buea, Cameroons, at an elevation of 4,200 feet. (See Kranzl. in *Engl. Jahrb.* xix. 254; *Flora Trop. Afr.* viii.). A Botanical Certificate was unanimously recommended for this plant.

At the meeting held on August 18th there was a very fine display of Orchids, and the awards consisted of seven medals, one First-class Certificate, six Awards of Merit, one Cultural Commendation, and six Botanical Certificates.

Sir Trevor Lawrence, Bart., K.C.V.O., Burford, Dorking (gr. Mr. White), staged a very interesting group, to which a Silver Flora Medal was awarded. It contained a fine example of *Catasetum pileatum* (*Burgerothii*), *Neobenthamia gracilis* with its pretty heads of white flowers, the rare *Schlimmia trifida*, the purple *Eulophia guineensis*, *Soprocattlælia pumeximia* (*L. pumila* × *S.-c. eximia*), and *Epicattleya Gaskello-costaricensis*. A First-class Certificate was given to *Odontoglossum* × *Wiganianum* *superbum* (*Wilckeanum* × *Rolfeæ*), an exceptionally fine form, and a Cultural Commendation to a very good specimen of *O. aspidorhinum* with about fifteen inflorescences. Botanical Certificates were given to the six following :—*Catasetum Claesianum* has an erect spike of greenish yellow flowers, with the sides of the lip fringed; *C. labiatum* has nearly globose green flowers, with the lip slightly exceeding the other segments; *Epidendrum Lambeauianum* is a dwarf species of the *Nanodes* group, bearing pretty whitish flowers with a large fleshy claret-coloured lip; *Listrostachys Kindtiana* is a dwarf species with racemes of small yellowish flowers; *Polystachya flexuosa* is a Central African species bearing heads of pretty white flowers spotted with purple on the lip; and *Eria longispica* has long erect spikes of pale green flowers, spotted with purple on the lip. It was recently figured in the *Botanical Magazine* (t. 8171).

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. Day), received a Silver Flora Medal for a choice group, containing a fine form of *Odontioda Charlesworthii*, *Cattleya* × *Pittiana*, the beautiful greenish-white *Brassocattleya* *Queen Alexandra*, *Cypripedium* × *Maudiaë*, *C.* × *H. S. Goodson*, *C.* × *A. de Lairese* with two fine spikes, *Lælio-cattleya* × *Massangeana*, and other fine things.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), staged a most interesting group of *Odontoglossums*, the best of which was a

striking novelty called *O. × Zenobia* (*Hallii × Edwardii*), bearing a large branching inflorescence, the sepals and petals being dark chocolate-purple tipped with white, and the lip chestnut-red, with a whitish apex and some paler markings round the yellow spiny crest. Other interesting novelties were *O. × Wardii* (*Kegeljani × Harryanum*), and *O. × Zena* (*sceptrum × Harryanum*). A selection of other hybrids, with cut spikes of *O. × cristatellum*, formed a most attractive group, to which a Silver Banksian Medal was given.

Lt.-Col. G. L. Holford, C.I.E., C.V.O., Westonbirt (gr. Mr. Alexander), sent a pretty little group of hybrids, including *Cattleya × Euphrasia*, Westonbirt var., *C. Tacitus* (*Grossii × Germania superba*), and *Lælio-cattleya Digbyano-Warneri*, Westonbirt var., a pretty rosy-lilac flower. An Award of Merit was given to *Cypripedium × Rosetti* (*insigne Sanderianum × Maudiae*), a beautiful thing having a circular yellow dorsal sepal, lined with emerald green, and broadly margined with white, the petals and lip being yellow tinged with green. A similar Award was given to *Sophro-Lælio-Cattleya × Medeia vinicolor* (*S.-l. Orpetiana × C. bicolor*), having a flower most like the former in shape, and the colour deep claret-purple, with a whitish column.

W. Waters Butler, Esq., Southfield, Edgbaston, sent *Odontoglossum Uroskinneri*, Southfield var., a large handsome form.

Mrs. T. B. Haywood, Reigate (gr. Mr. Salter), showed the handsome *Cypripedium × Sanderiano-Curtisii*.

G. W. Jessop, Esq., Cliffe Cottage, Rawdon (gr. Wilkinson), sent a good example of the bright yellow *Satyrium coriifolium*.

Messrs. Charlesworth and Co., Heaton, Bradford, staged a choice group, including the brilliant scarlet *Odontioda Craveniana*, the beautiful *Zygopetalum × Roeblingianum*, some good forms of *Cattleya × Iris*, *C. × Germania magnifica*, and *C. × Wavriniana*, some beautiful forms of *Odontoglossum Rolfeæ*, *× ardentissimum*, and *× Lambeauianum*, with various handsome *Lælio-Cattleyas* and *Cypripediums*. An Award of Merit was given to *Sophro-Lælio-Cattleya Marathon* (*S.-l. Psyche × C. Empress Frederick*), a fine hybrid having the flower most like the *Cattleya* in size and shape, the sepals and petals whitish tinged and flaked with rose, and the front of the lip ruby red, with a glowing orange tinge, and the base white veined with rose. A similar award was given to *Trichopilia nobilis alba*, having the flower pure white without the usual yellow eye.

Messrs. Gurney Wilson & Co., Haywards Heath, received a Silver Flora Medal for a beautiful group, consisting chiefly of good varieties of *Miltonia vexillaria*. *M. v. leucochila* has the lip entirely white, and *M. v. luteocentrum* has a clear lemon yellow disc.

Messrs. Hugh Low & Co., Enfield, received a Silver Banksian Medal

for a bright and pretty group, containing some good examples of *Oncidium Lanceanum*, *O. oblongatum citrinum*, *Ancistrochilus Thomsonianus*, *Bulbophyllum Lobbii*, *B. papillosum*, *Selenipedium macrochilum*, *Cypripediums*, &c.

Messrs. Moore, Ltd., Rawdon, Leeds, also received a Silver Banksian Medal for a choice group, including some good *Vanda cœrulea*, *Scuticaria Hadwenii*, *Angræcum bilobum*, *Oncidium Lanceanum*, *Bulbophyllum Dearei*, and a pretty little *Liparis*, having green flowers with a crimson lip.

Messrs. Sander & Sons, St. Albans, sent a few choice *Odontoglossums*, including some good forms of *O. × Rolfeæ* and *O. × crispo-Harryanum*, with the pretty *O. × Elaine* (*cirrhosum × Harryanum*).

Messrs. Stanley & Co., Southgate, sent the handsome *Lælio-cattleya elegans Turneri*, and some very good examples of *Cypripedium × A. de Lairese*.

The following note appears in the Report of the Scientific Committee for this date :—

ABNORMAL ORCHID.—From Messrs. Hugh Low & Co. came an Orchid, *Rodriguezia crispa*, showing an abnormal condition in the spike; the bracts were much longer than the flowers, and very closely grouped at the end of the inflorescence.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

A MEETING of this Society was held at the Coal Exchange, Manchester, on July 23rd, when a fair number of plants and flowers were exhibited. The following members of the Committee were present: Messrs. E. Ashworth (Chairman), H. H. Smith, Cowan, Ward, Warburton, Shill, Ball, Keeling, Thorp, Stevens, Holmes, Ashton, Parker, and Weathers (Hon. Sec.).

J. McCartney, Esq., Hey House, Bolton (gr. Mr. Holmes), showed a group of *Lælias*, *Cattleyas*, *Cypripediums*, and several other distinct plants, to which the Committee awarded a Silver Medal. *Lælia tenebrosa* Hey House var. and *Cattleya Mendelii* var. *Goliath* both received Awards of Merit.

Messrs. Hugh Low & Co., Enfield, showed *Cattleya Gaskelliana alba* in good form, and *Cypripedium × I'Ansoni*.

Max Isaac, Esq., Blundellsands (gr. Mr. Driver), showed *Cypripedium × Mahleræ* (*tixallense*), and a splendidly flowered *Lycaste Deppei* with over 30 flowers, which received a Cultural Certificate.

W. Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), showed the remarkable *Odontioda Charlesworthii* (First-class Certificate), and a finely-grown *Vanda cœrulea* (Cultural Certificate).

A. Warburton, Esq., Vine House, Haslingden (gr. Mr. Dalgleish),

showed a fine group of mixed plants, *Cattleyas*, *Cypripediums*, *Odontoglossums*, &c. A good plant of *Cattleya gigas*, Frau Melanie Beyrodt gained a First-class Certificate, and *C. × Parthenia* var. *Prince of Wales*, *Odontoglossum × Beta*, and the distinct *Pescatorea Warburtoni* all received Awards of Merit.

Herbert Arthur, Esq., Blackburn, showed a very pretty group of *Oncidiums*, in which I noted a good *O. crispum*, *O. Forbesii*, and *O. Wentworthianum*. This gentleman seems to have mastered the difficulties of *Oncidium* growing, and the plants exhibited were in excellent health. (Bronze Medal.)

Chas. Parker, Esq., Ashton-on-Ribble, Preston, staged a nice group of summer-flowering *Cypripediums* (Bronze Medal), in which I noted *C. callosum Sanderæ*, a good *C. Curtisii*, *C. × Mahleræ Youngii*, and *C. × Sanderiano-Curtisii*, the two latter receiving Awards of Merit.

Messrs. Keeling & Sons, Westgate Hill, Bradford, staged a mixed group, including several botanical species. I noted *Odontoglossum Harryanum* with two spikes, *Dendrobium Maccarthiæ*, *D. regium*, *Cattleya granulosa*, *Miltonia × Cogniauxiæ*, &c.

Mr. J. Birchenall, Alderly Edge, Cheshire, sent *Bollea Lalindei pallida*, *B. L. aurea*, and *Pescatorea Dayana*.

Mr. J. Stott, Radcliffe, staged *Lycaste Deppei*, *Lycaste aromatica*, of good form and size, *Cypripedium Curtisii*, and *Masdevallia corniculata*.

Ed. Rogerson, Esq., Oak Dene (gr. Mr. Price), staged a small group of select plants, including a good *Cattleya gigas*, and a fine plant of *Odontoglossum luteopurpureum* with a spike of 14 flowers. *Lælio-cattleya epicasta* was very good and received an Award of Merit.

Messrs. Sander & Sons, St. Albans, sent *Cypripedium × Mars*, *C. × Edwardii*, *C. × A. de Lairesse*, *C. × Lord Derby*, a fine hybrid between *C. × Goweri* and *Shillianum*, and *Miltonia × Hyeana* (*Bleuana × Roezlii*), &c.

J. Holden, Esq., Southport (gr. Mr. Johnson), showed *Cypripedium Lawrenceanum hackbridgense* and *C. × Rappartianum*, both of which gained Awards of Merit.

Mr. Wm. Bolton, Wilderspool, Warrington, showed a fine form of *Cattleya gigas* and *C. Gaskelliana alba*.

Mrs. Bolton, Heightside, Newchurch (gr. Mr. Eastwood), showed a grand specimen plant of *Odontoglossum luteopurpureum*, which gained a Cultural Certificate.

At the meeting held on August 13th, the number of exhibits showed a considerable falling off. The Committee was present as follows: Messrs. E. Ashworth (Chairman), Thorp, Leemann, Cowan, Warburton, Ward,

F. K. Sander, Upjohn, Keeling, Holmes, G. S. Ball, and Weathers (Hon. Sec.).

J. McCartney, Esq., Hey House, Bolton (gr. Mr. Holmes), showed a small group consisting chiefly of *Lælias* and *Cattleyas*. Very handsome and distinct in colour was *Brassocattleya Pluto* (*C. granulosa* × *B. Digbyana*), the sepals and petals having a strong yellow-green cast; the lip was fringed and streaked with red (Award of Merit). I noted also *Cypripedium* × *Clinkaberryanum* (Award of Merit), a well-flowered *Cattleya Gaskelliana*, a distinct *Lelia crispa*, *Læliocattleya elegans*, &c.

Chas. Parker, Esq., Preston, showed *Cypripedium* × *Oakes Ames*, *Fern Bank* var., in fine condition, *C. × Mahleræ*, Young's var., and *C. × M. Fern Bank* var., all three gaining Awards of Merit. I noted also a good *C. × Massaianum*, *C. Curtisii*, &c. (Silver Medal).

Mr. J. Birchenall, Alderly Edge, showed *Cattleya* × *Iris*, *Cypripedium tonsum* and *C. Rothschildianum*.

Messrs. Charlesworth & Co., Heaton, Bradford, showed the rare *Cypripedium* × *Princess* (*Fairrieanum* × *M. de Coffinet*), a fine *Cattleya* × *Germania*, and *Læliocattleya Lambeauiæ*, a fine large flower with a strong strain of *L. præstans*.

Messrs. Keeling & Sons, Bradford, showed a mixed group, including *Bulbophyllum Dearei*, of rich yellow colour with crimson stripes on the lower sepals (Award of Merit), *Cypripedium concolor*, *C. Godefroyæ*, *Lælia* × *nigrescens alba*, &c.

A. Warburton, Esq., Haslingden (gr. Mr. Dalgleish), gained an Award of Merit for *Odontoglossum* × *Rolfeæ inversum*.

G. Shorland Ball, Esq., Burton, Westmorland (gr. Mr. Herdman), showed *Bollea Lalindei*, which gained an Award of Merit, while a First-class Certificate was given to *Cypripedium* × *Olivia*, G. S. Ball's var.

Mr. J. Robson, Altrincham, showed a good specimen plant of *Cattleya* × *Hardyana* var. *King Edward* (Award of Merit).

Ed. Rogerson, Esq., Oak Dene, Didsbury (gr. Mr. Price), showed a select group of *Cypripediums*, including *C. × javanico-superbiens*, *C. × Gowerianum*, *Burkinshaw's* var., *C. × radiosum superbum*, *C. × Chorltoni*, *C. × Millmanii*, and *C. × Stanley Rogerson*, the last a very pretty hybrid probably between *C. tonsum* and *C. concolor*. *C. × calloso-Mastersianum* and *C. × Ultor* (*Sanderianum* × *Curtisii*) both gained Awards of Merit.

H. Arthur, Esq., Blackburn, gained an Award of Merit for *Oncidium* × *Wheatleyanum* (*O. crispum* × *dasytyle*).

H. Thorpe, Esq., Boothroyden, Rhodes, showed *Cattleya* × *Iris* var. *Rhodesia*, a home-raised seedling of very rich colour (Award of Merit).

R. Ashworth, Esq., Newchurch (gr. Mr. Fletcher), showed a very fine *Cypripedium* × *Rolfeæ* var. *R. Ashworth* (Award of Merit).

CATTLEYA LABIATA.

THE following article by Mr. Chas. Coates, The Gardens, Hatley Park, Sandy, Beds., has been awarded the prize offered weekly by the *Journal of Horticulture* to young gardeners for the best letter on a horticultural subject.

During the whole autumn and early winter seasons of the year what is more beautiful than a batch of the *Cattleya labiata* in bloom, with their flowers of mauve coloured petals and red lips? They are so useful for the decoration of the table for the parties that often take place in the later months. When these flowers are used in vases only, a little Maidenhair



Fig. 38. *CATTLEYA LABIATA* ROEHRSIANA.

fern is needed in conjunction with them. In a cut state they will keep fresh for two or three weeks if the water is changed. Intending growers of this plant will do well if they order them now, or if they can get a consignment from the importers so much the better.

When you get delivery of them lose no time in unpacking and placing them on a damp stage; cover with a mat for a day or two, and accustom them to the light. If white scale is detected on them, immerse them in a pailful of weak XL All insecticide. This will help to check any other insects that may have come with them. In two or three weeks' time they will emit their fleshy roots, and with the plumping of the future growth

they ought now to be put in pots consistent with the size of each plant. Instead of half filling the pots with crocks, as a good many growers do, two or three placed at the bottom will be enough ; then half fill the pots with rhizomes out of the peat. Proceed with the potting, which consists of a mixture of equal parts peat, with the fine shaken out, and sphagnum moss, chopped small. Add to this some nodules of charcoal and a sprinkling of coarse silver sand ; use a blunt piece of stick to make moderately firm.

Keep the growths on the top of the pot, which should have a surface of living sphagnum moss. Remove the plants to a house with a temperature of 60deg., rising 10deg. to 20deg. in the daytime. If the plants are watered, this will be enough for several weeks. Give more water when the days get longer and warmer. When in full growth they require water three or four times a week, and on very bright days it is beneficial to spray the plants overhead, but not so much as to make the water run into the young growths and cause decay. Regulate the ventilation according to outside conditions ; in July and August giving plenty at top and bottom, leaving a crack on the bottom all night. Guard against thrips by sponging with quassia periodically. After flowering they only need enough water to keep them from shrivelling. They will not need potting another year, but give a little top-dressing, at the same time cut off any old bulbs which look unsightly.

It is a good plan to partly cut the rhizomes, as this encourages the latent growths to break. Propagation is necessary to keep a collection vigorous. Some people favour buying plants raised from seed ; and it is quite natural they should, as the plants are acclimatised, seeing that they are bred and grown at home. In propagating Orchids, the seed ought to be sown directly it is ripe. Fold up some sphagnum moss in ordinary linen ; place it in a 4in. pot with the smooth side up ; keep it below the level of the rim, that a piece of glass may cover it. Distribute the seed very thinly with the end of a knife blade : replace the glass, and keep the pan in a very moist temperature of no less than 70deg. Spray the seed whenever it looks in the least dry, and shade from bright sun. Watch that the ants do not carry away the seeds. Sometimes the seed germinates within a month, and at other times not for several, and then unaccountably dies. Seedlings ought to be grown until they flower without a resting period, to save time and to avoid suspense.

The figure given on the preceding page represents an exceedingly fine inflorescence of *Cattleya labiata* Roehrsiana with eight flowers, which was grown in the establishment of Mr. Julius Roehrs, of the Exotic Nurseries, Rutherford, New Jersey, U.S.A. It is said to be unique and constant in character. The species is grown in large quantities for cut blooms, and the bright clear weather of the locality suits it to perfection.

CATASETUM FIMBRIATUM.

Two remarkably distinct forms of *Catasetum fimbriatum* have flowered in the collection of Sir Trevor Lawrence, Bart., Burford, Dorking, of which examples have been forwarded by Mr. White. One has the usual broad, strongly fimbriate lip, with the disc and inside of the sac deep yellow, the other has the lip entirely light green, with a few brown dots. The latter was obtained from Messrs. Sander & Sons, in 1889, as the variety *platypterum*, which had just been described by Reichenbach (*Gard. Chron.*, 1889, i. p. 168). The author described the lip as garlic green, adding: "This fine variety has larger flowers than any I have seen before," but I see nothing exceptional in this respect. The plant figured in the *Botanical Magazine* (t. 7158) was also obtained with the same name, but is not quite identical, for it has a little yellow on the disc of the lip. The species is very variable, and when Reichenbach described the variety *fissum* he remarked: "Cataseta are such polymorphic creatures that one could name new species by herds. Yet—*post equitem sedet atro cura*—you would have to give new names to many individuals."

The species was originally described and figured by E. Morren, in 1848, under the name of *Myanthus fimbriatus* (*Ann. de Gand.*, iv. p. 453. t. 231), from a plant which flowered in the collection of M. L. de Hamis, of Antwerp. It was exhibited at one of the Ghent meetings in September of that year, and was awarded a Gold Medal. The flowers are described as green and white, but shortly afterwards another plant flowered in the collection of M. Heynderyez, the flowers of which were described as rose and yellow. The colour of the figure agrees with neither, and may be described as whitish and dull purple, but the shape is quite characteristic. The country was not stated. Lindley afterwards called it *Catasetum fimbriatum* (*Paxt. Fl. Gard.*, i. p. 124, fig. 81).

Several varieties have been described. First came *fissum* (Rchb. f. in *Gard. Chron.*, 1881, i. p. 498), which flowered in the collection of J. Day, Esq., in September, 1881, when it was also figured (*Day Orch. Draw.*, xxvii. t. 45). It has a light yellow, deeply fringed lip, and rather dark markings on the sepals and petals. A plant which afterwards flowered in the collection of M. de Meulenaere was figured under the same name (*Rev. Hort. Belge*, 1888, p. 273, with plate). Next came *viridulum* (Rchb. f. in *Gard. Chron.*, 1887, ii. p. 272), from a plant which flowered with Messrs. Sander & Sons. It was said to have been received from Mt. Roraima, but the point requires confirmation. It comes rather near the original type. Two years later came *platypterum*, which has already been mentioned. The variety *Cogniauxii* (L. Lind. in *Journ. d. Orch.*, vi. p. 282), was introduced by Messrs. Linden, it is said, from the Orinoco district. It was subse-

quently figured in *Lindenia* (xi. t. 499), and has green flowers with a few brown spots on the lip, as well as on the sepals and petals. Lastly came *callosum* (L. Lind. in *Journ. d. Orch.* vi. p. 283), which is said to have rather small flowers, and some brown spots on the lip. It has the same history as the preceding.

In 1891 female flowers appeared in the collection of W. J. Wright, Esq., of Denmark Hill, a plant being exhibited at a meeting of the R.H.S. on September 5th, being two male and two female flowers on the same inflorescence. It is now preserved at Kew. The plant had been obtained from Monte Video.

The habitat of the species apparently remained unknown until 1887, when Messrs. Sander sent for determination materials said to have been obtained from Paraguay. This and the Urugayan locality have since been confirmed.

R. A. R.

ORCHIDS IN SEASON.

A WELL-FLOWERED scape of *Cypripedium* × *Maudiae* is sent from the collection of J. J. Holden, Esq., Oban House, Southport, by Mr. R. Johnson, who remarks that he has never seen such a thing before, nor can he hear of anyone that has. The first flower was splendidly developed, and the second expanded in water. A portrait of a single flower appears on page 266.

A flower of a pretty little hybrid from *Cattleya velutina* is sent from the collection of the Right Hon. J. Chamberlain, M.P., Highbury, Birmingham, by Mr. Mackay. The second parent is unfortunately not known, but the pollinia show that it was some other *Cattleya*. The plant has two-leaved pseudobulbs, and the inflorescence is at present two-flowered. The flower most resembles *C. velutina* in shape, but is larger, and has light greenish sepals and petals, the margins of the latter being strongly suffused with light purple. The lip is three-lobed, with a deep yellow tube, the side lobes tinged with lilac at the apex, and the front lobe lilac-purple, closely veined with bright purple on the lower half.

A very varied and beautiful series of flowers is sent from the collection of J. J. Neale, Esq., of Penarth, by Mr. Haddon. It includes a very handsome flower of *Lælia grandiflora* (*majalis*). The plants are grown with *Sarracenias*, exposed to full sun, and syringed several times a day, and are said to have done very well this year. Other well-known showy species are *Cattleya Gaskelliana* and *Warscewiczii*, *Lælio-cattleya amanda* and a very pretty little hybrid said to be from *Cattleya maxima* × *Lælia pumila*, having rosy-lilac sepals and petals of good shape, and a very dark crimson undulate lip, with a deep yellow throat, and rich crimson veining on the disc, *Paphiopedilum exul*, *P. Parishii*, and the rare *P. præstans*, *Vanda*

cœrulea and teres, Phalænopsis amabilis, Epidendrum cochleatum, Phragmopedilum $\times$ Sedenii candidulum and $\times$ calurum, Odontoglossum Schlieperianum, O. bictoniense, and the very distinct O. bictoniense album, O. Cœrstedii, and a good O. crispum, Cochlioda vulcanica, Miltonia Regnellii, the striking Oncidium dasytyle, O. micropogon, incurvum, oblongatum and flexuosum. There are also Masdevallia muscosa, bella, $\times$ Heathii and $\times$ Parlatoresana, Bifrenaria vitellina, Dendrobium mutabile and a few other interesting things.

A later series from the same collection contained the brilliant Disa grandiflora, Lælio-cattleya bletchleyensis and elegans, Cattleyas Dowiana and Lueddemanniana, Tricopilia coccinea and nobilis, Miltonia spectabilis Moreliana, Oncidium macranthum, Angræcum Scottianum, and Epidendrum nocturnum.

A flower of the very richly coloured Sophrocattlæia Medeia vinicolor, to which an Award of Merit was given by the R.H.S. on August 18th, is sent from the collection of Lt.-Col. G. L. Holford, Westonbirt, Tetbury, by Mr. Alexander. The parents are Cattleya bicolor and Sophrolælia læta Orpetiana, whose characters are very well combined in it. The flower is of an intense claret-purple, with very small side lobes to the lip, showing the influence of the Cattleya parent, but the petals much broader than in that species. The column is white.

ORCHIS MACULATA.

AN interesting article entitled "The life history of a wild Orchid," by John J. Ward, appears in the August issue of the *Strand Magazine*, illustrated by seven photographic figures by the author. The subject is the spotted Orchis, *Orchis maculata*, found growing in damp grassy places in a Warwickshire country lane. Its habit, the structure of the roots and flowers, and the details of fertilisation are given, and the author expresses the opinion that the spotting on the leaves is a protective arrangement to prevent them from being eaten by grazing animals. "Many are the half-hours," he remarks "in which I have puzzled over those leaves. The leaves are smooth, glassy, deep olive green, and spotted with stripes and dots of a dark brown pigment; and it is these curious, brown markings that make them so mysterious. Their function has always been an unsoluble problem. . . . Time after time, when looking on those weird spots and trying to decipher their hidden meaning, it has seemed to me that they presented an appearance with which I was familiar, but the explanation I was seeking persistently evaded me. To-day I think I have caught a glimpse of their true significance. . . . By the side of my moist plot where the Orchids grow thickest there lies a wood, and I had just reached the edge of it, in my search for choice specimens of the plant,

when I observed part of what was apparently a particularly attractive leaf resting against the fresh green of the surrounding grass. I stretched out my hand to remove them from some of the grass that was covering this fresh-looking plant, when instantly the leaf disappeared from view, and a moment later an adder—a rare reptile in this district—scuttled away into the hedge bottom and disappeared in the wood. That rapid glimpse of the startled reptile awakened my memory, and I was suddenly enabled to explain what, in my mind, the curious spotted leaves of the wild *Orchis* resembled. The exposed part of the olive body of that viper, striped and spotted with dark markings, as it appeared amongst the grass, was almost identical with the appearance of some of the leaves of the *Orchis* when similarly placed. . . . Remember that this is how grazing animals would view the plant. Now grazing animals doubtless possess a much better acquaintance with snakes and similar reptiles, such as frogs, toads, and newts, than man does. In the course of their daily feeding among the herbage no doubt they frequently meet with them, and especially in those districts where these creatures are abundant. It follows, therefore, that they naturally avoid them.”

The subject is interesting, whether this be the true significance of the markings or not, but it may be added that the character is seen in several other species, as *O. mascula*, *O. latifolia*, *O. provincialis*, and in the South African *Stenoglottis nimbriata*. Some species have forms with spotted and others with unspotted leaves, and many species which grow in similar stations get along very well without purple markings at all.—ED.

ODONTOGLOSSUMS FROM WALTON GRANGE.

FIVE interesting and beautiful *Odontoglossums* are sent from the collection of W. Thompson Esq., Walton Grange, Stone, by Mr. Stevens. Two of them are said to have been raised from the same seed-pod of *O. crispum*, crossed with pollen from a plant obtained from M. Vuylsteke with the record *O. luteopurpureum* × *crispum* Franz Masereel, which would make it a form of *O.* × *Wilckeanum*. Had they appeared among imported plants, they would have been called spotted *crispums*, but as it is they must rank as forms of *O.* × *mirum*. The first has a white ground, tinged with pale lilac, about three fourths covered with large, more or less confluent purple blotches, and the lip blotched and spotted with crimson-brown, including the yellow disc. This flower, Mr. Stevens says, has been out at least six weeks, and has lost colour. The next has the blotches deep chestnut brown and less broken up, while the lip is broad and much spotted with similar colour. Mr. Stevens says the hybrid is very free-flowering, the flowers sent having been produced on very small bulbs, and several others are showing

for flower. The third, Mr. Stevens says, bears the same seedling number, but differs so much from the others that he thinks it may have a different parentage. It has a white ground, with about two purple blotches on the sepals, the lower blotch being sometimes broken up, and a purple blotch on the lip, in front of the crest, with a few spots at the side. The petals are with one exception unspotted. In view of the well known variability of seedlings from the same capsule, this may well belong to the same batch. The next is a form of *O. × armainvillierense*, but is most like *O. Pescatorei* in shape. The sepals are tinged with lilac, and bear a few small purple spots, the petals are white and unspotted, and the lip bears a deep claret-purple blotch in front of the deep orange yellow crest, with a broad basal band of claret-purple on the side lobes. The other is said to be from a *O. × Rolfeæ × crispum*, but if so is a surprising reversion, for it has the general characters of the former with the ground colour of the sepals and petals light yellow. They form a very interesting little group.

CATTLEYA × CLAESIANA.

THIS interesting Cattleya, which was introduced by Messrs. Linden, of Brussels, and flowered in the collection of the Right Hon. J. Chamberlain, in May, 1894, was described as a supposed natural hybrid from *C. intermedia* and *C. Loddigesii* (*O. R.* vii. p. 72), and *C. × intermedio-Loddigesii*, which was exhibited from the collection of the Hon. Walter Rothschild, in May, 1896 (*G. C.* 1896, i. p. 593), was supposed to be identical. The information given by M. Forget some time ago, that *C. Harrisoniana* occurs in the hot lowlands near Rio, where it grows in company with *C. intermedia*, *C. Forbesii*, and others, while *C. Loddigesii* is a cool grower from a higher altitude, suggests that the former may be the second parent. We should like to see the point cleared up. R. A. R.

NOTES.

THREE meetings of the Royal Horticultural Society will be held at the Royal Horticultural Hall, Vincent Square, Westminster, during September, on the 1st, 15th, and 29th, when the Orchid Committee will meet at the usual hour, 12 o'clock noon.

The Manchester and North of England Orchid Society will hold meetings at the Corn Exchange, Manchester, on September 3rd and 24th. The Committee meets at 12 o'clock noon, and the exhibits are open to inspection from 1 to 4 p.m.

An illustration of the fine group of Orchids exhibited by Messrs. Wm. Bull & Sons at the last Temple Show is given in the *Journal of Horticulture* for August 6th (p. 123).

Mr. W. P. Bound, gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate, writes that he has purchased a business at Redhill, and after September 29th next his address will be, Redhill Nurseries, 112 and 114, Station Road, Redhill, where he will carry on the business of Nurseryman, Seedsman and Sundriesman. Mr. Bound has been at Gatton Park for nearly nine years, and his skill as an Orchid cultivator and hybridist are well known to our readers, who no doubt will join us in wishing him success in his new career.

ORCHID PORTRAITS.

DENDROBIUM BRYMERIANUM, GATTON PARK VAR.—*Gard. Chron.*, 1908 ii. p. 110, with suppl. fig.

ODONTIODA THWAITESLÆ.—*Journ. Hort.*, 1908, ii. p. 147, with fig.

ODONTOGLOSSUM × WIGANIANUM SUPERBUM.—*Gard. Mag.*, 1908, p. 651, with fig.

POLYSTACHYA LAWRENCEANA, Kränzl.—*Bot. Mag.*, t. 8211.

SOPHROCATTLEYA WARNHAMENSIS VAR. J. M. BLACK.—*Journ. Hort.*, 1908, ii. p. 171, with fig.; *Garden*, 1908, ii. p. 423, with fig.

STANHOPEA OCULATA.—*Gard. Chron.*, 1908, ii. p. 115, fig. 44.

TRICHOPILIA HENNISIANA, Kränzl.—*Orchis*, ii. p. 121, t. 18, fig. 18.

VANDA SANDERIANA.—*Journ. Hort.*, 1908, ii. pp. 147, 149, with fig.

ZYGOPETALUM (Promenæa) XANTHINUM.—*Journ. Hort.*, 1908, ii. p. 195, with fig.

ANSWERS TO CORRESPONDENTS.

[Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An ADDRESSED postcard must be sent if a reply by post is desired (abroad, reply postcards should be used). Subjects of special interest will be dealt with in the body of the work].

B. S. Some notes on the winter treatment of Cattleyas will be found in the Calendar of Operations. Generally speaking, the compost should be kept fairly dry when the plants are at rest.

H. H. *Oncidium spilopterum*, Lindl.

S. S. We should suggest the flower sent to be a form of *Cattleya* × *Macænas*, a hybrid between *C. superba* and *gigas*. The lip is more deeply lobed than in the hybrid *C. Harrisoniana* × *gigas*.

W. H. B. *Dendrobium nudum* is correct.

D. W. D. We do not recognise the fibre sent, and you do not say a word as to its origin, nor yet whether it has been used for potting Orchids. It is something unfamiliar, and its suitability remains to be proved.

H. G. and F. B. Letters follow.

R. L. C. We cannot suggest a name for the Cypripede from the description, but you may have a flower to spare later. In surfacing with sphagnum it is customary to insert a few living pieces by the base, when they grow, and, of course, keep green, if sprayed occasionally.

CATALOGUE RECEIVED. We have received the Catalogue Générale d'Horticulture issued by M. Draps, of Brussels, including a good selection of Orchids.

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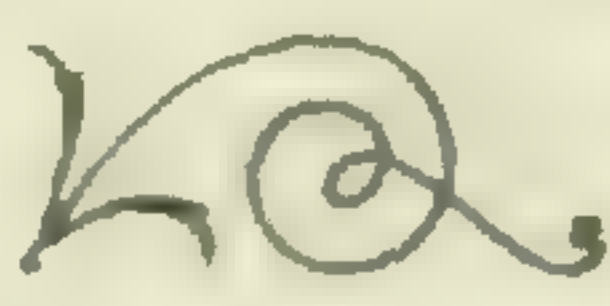
ORCHID REVIEW:

An Illustrated Monthly Journal of Orchidology.

Contents.

	PAGE		PAGE
Answers to Correspondents	320	Odontoglossum crocidipterum	295
Calendar of Operations for October ...	299	Orchid Nomenclature	320
Cattleya × Claesiana	295	Orchid Portraits	320
Cycnoches Egertonianum	296	Orchids at Gatton Park, Reigate ...	292
Male and female inflorescences (fig. 38)	296	Orchids at Kew	318
Reproduction of Bateman's painting		Orchids at Rawdon, Leeds	302
(fig. 39)	297	Orchids from Stanley Park	318
Govenia lagenophora	316	Orchids in season	319
Habenaria carnea (fig. 40)	304, 305	Societies	306
Hybridist	317	Manchester and North of England	
Cattleya × Venus	318	Orchid	312
Epicattleya Pearl	317	Royal Horticultural	306
Notes	319	Variation and Inheritance	289

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Volumes I. to XV. can be supplied unbound at 6/-, or bound in cloth, 7/6, postage extra. Cost of postage: book post, 9d. per volume; parcel post within the United Kingdom only, 5d. per single volume (series by weight).

Also cases for binding either volume at 1/6 each, post free throughout the postal union.

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THE ORCHID REVIEW.

VOL. XVI.]

OCTOBER, 1908.

[No. 190.]

VARIATION AND INHERITANCE.

THE British Association for the Advancement of Science has just held its meeting at Dublin, and it was appropriate that in the jubilee year of the publication of the theory of the Origin of Species by Natural Selection the President should have been a son of one of the original authors, Dr. Francis Darwin, M.A., F.R.S., who has himself contributed largely to our knowledge of the movements of plants. In his inaugural address he pointed out that there had not been a botanical President since the Norwich meeting forty years ago, when Sir Joseph Hooker was in the chair, and spoke in eloquent and felicitous words in defence of the doctrine of Evolution. Excusing himself from a general survey of the progress of the theory during the last fifty years, he devoted himself to the subject of the movements of plants, and its bearing on the question of Evolution.

He attempted to give a general idea of how changes of condition act as stimuli, and compel plants to execute certain movements, and then went on to show that what was true of those temporary changes of shape, described as movements, is also true of those permanent alterations of shape known as morphological. He insisted that if the study of movement includes the problem of stimulus and reaction, morphological changes must be investigated from the same point of view. The two must be classed together, and this showed that the dim beginnings of habit or unconscious memory found in plants and animals, must find a place in morphology. A striking instance of correlated morphological change was to be found in the development of the adult from the ovum, and he took this ontogenic series and attempted to show that here also something equivalent to memory or habit reigns. The fact that plants must be classed with animals in the manner of their reaction to stimuli has now become almost a commonplace of physiology. An organism is a machine that can be set free by some kind of releasing mechanism, but the result was out of all proportion to the original stimulus. We could, as a rule, only know the stimulus and the response, the intermediate processes of the mechanism were hidden in the secret life of protoplasm. That big changes would result from small stimuli might have been guessed, since it was clear that the success of an

organism in the world must depend partly at least on its being highly sensitive to changes in its surroundings. It was the adaptive side of the fact that living protoplasm is a highly unstable body. From the Darwinian standpoint it would be a remarkable fact if the reactions of stimuli were not adaptive.

The reaction of an organism depends on its past history, and in the higher organisms past experience is all-important in deciding the nature of response to stimulus. Morphological changes and the stimuli by which they are produced have now been brought under the rubric of reaction to stimuli. It is now widely believed that the nucleus is the bearer of the qualities transmitted from generation to generation, and the regulator of ontogeny, and it may play the part of a central nervous system. Although plants had no nervous system, the complex system of nuclei connected by protoplasmic threads, might play the part of nerves.

Among habits illustrating a mnemonic or memory-like factor in the life of plants might be mentioned the habit of sleeping. Sleeping plants had a day position and a night position, but if a plant in a sleeping position were placed in a darkened room, it would be found next morning in the light position, even if all light were excluded. The habit had been built up by the alternation of day and night, and the leaves now rise and fall in the absence of the original stimulus, a capacity acquired by repetition. But a rhythm of six hours or of a much shorter period could be built up artificially. When a series of actions follow each other in natural sequence, they become organically tied together, or associated, and follow each other automatically, **even when the whole series of stimuli are not acting.**

As regards reaction to environment, a plant and a man must be placed in the same great class, in spite of their enormous differences. He believed that the mnemonic quality in all living things must depend on the physical changes in protoplasm, and therefore it was permissible to use these changes as a notation in which the phenomena of habit might be expressed.

Morphological changes were reactions to stimulations of the same kind as the temporary changes already discussed, and here indeed were the most striking cases of habit to be found. The development of the individual from the germ was by a series of stages of cell division and growth, each serving as a stimulus to the next, and each following its predecessor like the movements linked together in an habitual action performed by an animal. The rhythm of ontogeny is actually and literally a habit, and has all the characteristic features of the **same—an automatic quality which is seen in the performance of a series of actions in the absence of the complete series of stimuli to which they were originally due.**

In all bisexual organisms the ontogenic rhythm of the offspring is a combination of the rhythms of its parents, and in crossing the result may

be a blend, or the hybrid may assume the character of the prepotent parent. Ontogeny is a mnemonic phenomenon, and evolution in the modern sense is a change in the ontogenic rhythm. If the rhythm is fixed no new variations can arise, so that we may ask how the rhythm may be altered. A beech tree may be made to develop different forms of leaves by exposing it to sunshine or to shade. The ontogeny is different in the two cases, and what is specially interesting is that there exist shade-loving plants in which a structure similar to that of the shaded beech leaf is typical of the species. And Goebel has pointed out that in some Orchids the assimilating roots take on a flattened form when exposed to sunlight, but in others this morphological change has become automatic, and occurs even in darkness.

The mnemonic theory depends on the possibility of what is known as somatic inheritance, or the inheritance of acquired characters, which some deny in toto, but which it is forgotten, may be, as he had tried to show, an integral part of all evolutionary development. Weismannism, though now much modified and liberalised, in his opinion failed to be a satisfactory theory of evolution, for in spite of its apparent strength it fails to connect the process of ontogeny with physiological processes of which we have any definite knowledge. After discussing other phases of the question, which we cannot go into, and pointing out difficulties and objections, Mr. Darwin expressed the opinion that somatic inheritance lies at the root of all evolution.

We may fix our eyes on phylogeny and regard the living world as a great chain of forms, each of which has learnt something of which its predecessors were ignorant; or we may attend rather to ontogeny, where the lessons learned become in part automatic. But we must remember that the distinction between phylogeny and ontogeny is an artificial one, and that routine and acquisition are blended in life. The great engine of natural selection is taunted nowadays, as it was fifty years ago, with being merely a negative power, but he ventured to think that the mnemonic hypothesis of evolution made the positive value of natural selection more obvious. If evolution is a process of drilling organisms into habits, the elimination of those that cannot learn is an integral part of the process, and is no less real because it is carried out by a self-acting system. Natural selection attains in a blind, mechanical way the ends gained by a human breeder; and may be said to have the power of an automatic master, with endless patience and all time at his disposal.

This is necessarily a very brief summary of a most interesting and important address, and its bearing upon the progressive development of Orchids, and indeed of the evolution of the Order, will be obvious to many of our readers.

ORCHIDS AT GATTON PARK, REIGATE.

ANOTHER interesting feature is being added to the fine collection of Orchids at Gatton Park, Reigate, for when calling there the other day we were much pleased to find a number of rare botanical species in bloom. A good many such have been recently added to the collection, and among them batches from Australia and Java, which are gradually establishing themselves, and will provide additional attractions in the near future. Sir Jeremiah Colman expressed a great interest in these plants, and there is plenty of scope for development in this direction, many very interesting and even showy plants being still rare and almost unknown in cultivation. The remarkable Australian *Dendrobium cucumerium* is not found in many collections, but here was a healthy plant, with leaves resembling little cucumbers, and it has already flowered. *D. angulatum*, a Javan species, was in bud, and two plants of the rare *Bulbophyllum lemniscatoides*—a plant we have not seen for years—were in bloom. The slender scape bears a short pendulous spike of hairy flowers, and from each sepal hangs a long slender appendage, as in the curious *B. lemniscatum* (*Bot. Mag.*, t. 5961). One, however, requires a good lens to appreciate its remarkable character. Many showy things were in bloom, and may be mentioned in the order of our notes.

The first house visited was gay with bloom, including several beautiful examples of *Lælio-cattleya* Nysa, Phryne and luminosa, *Cattleya* × suavior, × Wendlandiana, × amabilis, × Mrs. Pitt, × Iris, × Parthenia, and others, mostly forms raised in the collection and of great decorative value. *Sophrocathlæia* × Mary (L.-c. Helena × *S. grandiflora*) is a very promising hybrid which had just expanded a flower, showing a deep yellow ground colour variously marked with red and orange. A plant of *Dendrobium* × Snowflake was covered with bloom, and there was a good example of the handsomely blotched *Brassocattleya* Mary. A hybrid from *Lælia anceps* × L.-c. Charlesworthii was pushing up a spike, and it will be very curious to see what the flowers are like. The species in bloom included three richly-coloured *Phalænopsis* Esmeralda, *Bulbophyllum grandiflorum*, *B. Godseffianum*, *Cirrhopetalum appendiculatum* with five flowers, *C. fascinator*, *C. Macraei*, *Catasetum viridiflavum* with two fine spikes, *Angræcum Scottianum*, *Dendrobium ciliatum*, *D. Phalænopsis* Gatton Park var., having violet markings on the lip, *Ancistrochilus Thomsonianus*, and *Spathoglottis Fortunei*, which is said to have been in bloom for months. It was bearing a capsule, as the result of crossing with *S. plicata*, but Mr. Bound has made numerous attempts to unite it with *S. × Colmanii*, both as seed and pollen parent, and always without success.

In the corridor from which several of the houses extend, we saw a good plant of the remarkable *Lissochilus giganteus*, which has produced a spike

about twelve feet long this year. It is grown in an ordinary pot, and never dried off, but is not treated as an aquatic. There was also a batch of about two dozen *Phaiocalanthe Colmanii*, which will produce a good show later on. A plant of *Broughtonia sanguinea* had two spikes of bloom, and we noted three capsules on it. Over a hundred spikes of white forms of *Lælia anceps* were pushing up, and the cultural points which Mr. Bound insists on as most important are plenty of sun, shutting the house up early enough to ensure a rise of temperature in the afternoon, and putting on top air at night. A good plant of the Javan *Phaius flavus* was in bloom, with the handsome *Lælio-cattleya callistoglossa superba* and *L.-c. Nysa*. A hybrid of *Lælia Cowanii* × *anceps Dawsoni* was pointed out as throwing up a spike. A plant of *Epilælia radico-purpurata* had a spike of three flowers, in which very little of the *Lælia* character, which was the mother, was visible. *Epidendrum Wallisii*, in flower, was pointed out with the remark that it cannot be crossed with *Cattleya*. The charming little *Lælia monophylla* was bearing many flowers, and Mr. Bound remarked that he had many times tried to hybridise it, but could never get a pod, either as seed or pollen parent. There were also some good flowers of *L. pumila*, and a very fine form of *Promenæa xanthina*, with a plant of *Gongora galeata*.

The next house was largely devoted to *Cattleyas* in various stages, and we noted about three dozen *Dendrobium Phalænopsis* in bloom, in various shades of colour, producing a very charming display.

A Cool house contained many interesting things in bloom, including a fine series of *Masdevallia Chestertoni*, *Carderi*, *trichæte*, *tridactylites*, *nidifica*, *calura*, *erythochæte*, *Roezlii*, and many others. A large form of *M. Chimæra* is said to have produced a flower measuring eighteen inches from tip to tip of the sepals. *M. melanoxantha*, a species now excessively rare, was also in bloom, with *Scaphosepalum antenniferum*, *anchoriferum*, *gibberosum*, and *octhodes*, *Physosiphon Loddigesii*, *Pleurothallis macroblepharis*, and other interesting things. A plant of *Odontoglossum tripudians* bore a branched spike of twenty-six flowers, and we noted *O. Uroskinneri*, *O. Harryanum*, and *Cochlioda rosea* in bloom. A lot of spikes were pushing up, and we noted capsules on *C. Nætzliana*, *Odontoglossum ramosissimum*, and *O. Edwardii*.

Passing into the next house we found a nice batch of *Cattleya* × *Browniæ* in flower. It is a hybrid between *C. Bowringiana* and *C. Harrisoniana*, and of great value as a decorative plant. A light form of *Cœlogyne speciosa* carried six blooms, and it was remarked that this plant was the seed parent of the pretty *C. × Colmanii*, plants of which were growing near by. Other interesting things in flower were two good *Brassia longissima*, *Warscewiczella Wailesiana*, *Miltonia Regnellii citrina* and *Gatton Park* var., *M. spectabilis Moreliana*, *Oncidium × Mantinii*, *Epidendrum fragrans*, &c.

The seedling *Odontoglossums* have made great progress since we last saw them, and are now found in quantity in every stage, a few having already bloomed, while there were many seedlings of the present year, some of them not yet pricked off. Some good plants of *O. Edwardii* × *nobile* were pointed out, also a lot of *Cochlioda* seedlings. One sturdy seedling from *C. Noetzliana* × *O. crispum* Mrs. Jeremiah Colman was showing the unusual number of four breaks from a single bulb, two from the axil of each sheath. A nice lot of hybrid seedlings from *Sophronitis grandiflora* were suspended from the roof.

Coming to the houses devoted chiefly to seedlings, we found an enormous number of *Cattleya*, *Lælia*, and *Brassavola* hybrids in all stages, and we noted a batch of *Lælio-cattleya* *Ophir*, one of which was in sheath, this being the first raised in the collection to reach the flowering stage. *Lælia* × *cinnabrosa* × *tenebrosa* was fairly intermediate in shape, but most like the latter in colour. There were very many interesting crosses, which must be left till they flower. There was a batch of about two dozen plants of *Cœlogyne pandurata*, and one capsule, the result of crossing with the dwarf *C. Schilleriana*.

The *Dendrobiums* were a remarkably fine lot, and some of the young stems were enormous. It was curious to see two or three plants full of bloom at this season, but Mr. Bound remarked that there are two or three hybrids of *D.* × *Cassiope* which seem to grow and flower at any time, these including *D.* × *Snowflake* and *D.* × *Alice Bound*. The character might be worth developing. A number of rare Australian and Javan species of recent importation were pointed out, and among them *D. bicaudatum* and *D. angulatum* in bud. It is interesting to record that the collection contains some young seedlings of the beautiful *D. regium*, which we hope to hear of later on.

The *Calanthes* were a most vigorous and healthy lot, now nearly matured, and already throwing up spikes, in one case, five from a single bulb. They were described as growing in "ordinary geranium compost."

The *Spathoglottis* were in thriving condition, the deep yellow *S. aurea* Gatton Park var. being in flower. Mr. Bound remarked that he crossed *S. plicata* with *S.* × *Colmanii*, but that the offspring were *S. plicata* pure and simple. The former, however, is so easily self-fertilised that it may not have been a true cross. *S.* × *kewensis* he cannot get to unite with any of the yellow-flowered kinds.

Our notes might easily have been greatly extended, but many interesting features were obliged to be passed over. Mr. Bound has managed the collection with great success for nearly nine years, indeed it has almost grown up with him, and is now commencing business on his own account. We know that he carries with him the best wishes of his late employer, Sir

Jeremiah Colman, Bart. His successor is Mr. John Collier, late gardener to G. Singer, Esq., Coundon Court, Coventry, under whose care there is reason to believe that the high reputation of the collection will be maintained.

ODONTOGLOSSUM CROCIDIPTERUM.

A plant of this rare species has appeared in the establishment of M. Theodor Franke, Gross Ottersleben, Germany, in an importation of *O. nobile* (*Pescatorei*). The species was described by Reichenbach in 1871 (*Gard. Chron.*, 1871, p. 1129), the author comparing it with *O. nævium* and *O. odoratum*, but remarking that it differed in its many-fringed column wings, which took the place of the single bristle. It had been received from Messrs. Hugh Low & Co., and from John Day, Esq. The latter flowered it in August, 1871, and made a drawing (*Orch. Draw.*, xvi. t. 13), recording the fact that he had purchased it a year before from Messrs. Low, who had imported it with *O. triumphans* and other species. It was discovered by Bruckmüller, when collecting for Messrs. Low, and is said to occupy a limited range on the Eastern Cordillera between Ocana and Pamplona, at an altitude of 6,000 to 7,500 feet, growing on the branches of trees in partial shade, occasionally in company with *O. triumphans*. The plant is much like *O. blandum* in habit, but the flowers are more like *O. odoratum*, the sepals and petals being light-yellow, spotted with brown, and the lip white at the base and brown in front. The flowers have a pleasant hawthorn-like fragrance. Mr. Day made a second drawing in December 1882 (*Orch. Draw.*, xxxii. t. 23), from a plant which flowered with Messrs. Veitch, and there is also a published figure (*Rehb. f. Xen. Orch.* ii., p. 209, t. 192, fig. 2), but the species has always been rare in cultivation.

R. A. R.

CATTLEYA × CLAESIANA.

WITH reference to the parentage suggested for *Cattleya* × *Claesiana* at page 287, M. Florent Claes writes that he thinks it correct, for he himself collected the plant in the hot lowlands, in January, 1893, though it was not then in flower, and he thinks that the information given by M. Forget about *C. Harrisoniana* and *C. Loddigesii* is correct. It would be interesting if some one would now cross *C. Harrisoniana* and *C. intermedia* together, and let us know the result.

Respecting the habitat of *C. velutina*, M. Claes remarks that he found the species not far distant from the place where he found the first plants of *C. Alexandræ* (now known to be identical with *C. elongata*). This species M. Claes states is most floriferous in its native country, even small bulbs producing spikes. Unfortunately it has now become extremely rare in our collections, and a difficulty seems to have been found in cultivating it successfully.

CYCNOCHES EGERTONIANUM.

LAST year a photograph of Bateman's original painting of *Cycnoches Egertonianum* was reproduced in this work (O.R., xv. p. 337, fig. 37),



Fig. 38. *CYCNOCHES EGERTON* (♂ on left, ♀ on right.)

together with its original history, and it was pointed out that the plate showed the males of two distinct species, belonging to different sections of the genus. Just previously a female inflorescence had been produced by a

plant at Kew (*l.c.* p. 283), of which Mr. Raffill secured a photograph. This year the same plant has produced a male raceme, which Mr. Raffill has also photographed, and as no authentic figure of the female flowers has yet appeared, the two photographs have been combined and are here reproduced.



Fig. 39. *CYCNOCHES EGERTONIANUM* (from Bateman's drawing).

A comparison with Bateman's figure, which is here repeated, will show in a moment that a great mistake was originally made, and there can no longer be any doubt that Bateman's artist restored the green flowers ("which were

still hanging to the stem," probably much withered, when the purple ones appeared) with the help of an earlier drawing. Incidentally it may also be remarked that the camera and the artist have preserved quite different impressions of the male inflorescence, which we have seen alive several times, and when dried have been able to compare with those which appeared over half a century ago, and thus can confirm their absolute identity. The present figure also confirms the record made in 1895 of the production of male and female inflorescences on two plants at Kew which were originally parts of a single one (*O.R.*, iii. p. 233). And since the present figure was prepared Messrs. Charlesworth have informed us that this autumn a plant in their establishment has produced the purple male flowers and the green female flowers on either sides of the same pseudobulb, at the same time, a very interesting occurrence.

It is very curious that the mistake should have remained undetected for so long a period, especially in view of the following note by Dr. Lindley, which appeared about the end of 1843 (*Bot. Reg.*, xxix., Misc. p. 77, with fig.) :—"On the 15th of September last, I received from Robert Steyner Holford, Esq., of Westonbirt, near Tetbury, in Gloucestershire, a flower-spike bearing flowers of *Cynoches ventricosum* and *C. Egertonianum* *intermixed*; it was exhibited at a meeting of the Horticultural Society, and I now produce a figure of it. The plant which bore this specimen had been purchased by Mr. Holford of Messrs. Rollissons, of Tooting, as *Cynoches ventricosum*. Here it will be seen that fig. 2 is nearly *Cynoches ventricosum*, but its lip is here and there raised into warts, which are the beginning of the lobes of *C. Egertonianum*, and moreover some of the dark purple of the latter is appearing at the base of the column and the tips of the sepals. At fig. 3 the purple of *Egertonianum* is displacing the green of *ventricosum*, the sepals are rolling back, and the labellum is almost wholly changed, but the sepals are still those of *C. ventricosum*. At figs. 4 and 5 the transformation is complete. Another curious point in this instance is that the transformations occur in no certain order. The lowest flower on the spike, No. 1, is more *Egertonianum* than *ventricosum*, the next above it, No. 2, is almost wholly *ventricosum*; that which succeeds, No. 3, is more *ventricosum* than *Egertonianum*; and 4 and 5, the last on the spike, are wholly *Egertonianum*." Instead of *C. ventricosum* we must now say the female of *C. Egertonianum*, and then we can understand this remarkable inflorescence.

Had it been understood at the time that the two kinds of flowers were of different sexes it is possible that *C. ventricosum* and *C. Egertonianum* would never have been confused at all, though they appear to grow in the same district, and sometimes intermixed. It may be added that *C. ventricosum* belongs to the section *Eucynoches*, and is nearly allied to *C. chloro-*

chilon, in which the two sexes do not show much diversity, except in the female having a short stout column, with a pair of triangular wings. It is in the section *Heteranthæ* that the great diversity is seen, and in the one now figured the difference is as striking in colour as in shape. Well might Lindley say that "notwithstanding . . . the unquestionable authority of Mr. Bateman, there were many persons, well skilled in the habits of *Orchidaceæ*, who felt convinced that some mistake had been made," though he himself little dreamt of the real explanation, or he would not have spoken of "all ideas of species and stability of structure in the vegetable kingdom being shaken to their foundation."

Bateman's own remarks on the subject, written over half a century after the event, are extremely interesting, and may be found in an earlier volume (*O.R.*, vi. p. 57).

It will be observed that the photograph showing the male inflorescence is on a slightly smaller scale than that showing the female, this being on account of the length of the raceme, and even now the five lowermost flowers have been omitted. The light back-ground was used to show up the purple flowers, and the dark one to show up the green flowers.

R. A. ROLFE.

CALENDAR OF OPERATIONS FOR OCTOBER.

By W. J. MORGAN, Rann Lea Gardens, Rainhill, Lancs.

CYPRIPEDIUMS will soon be making a good show, and will see us well through the worst of the dull days. With a little care the flowers will keep in perfection for ten or twelve weeks without injury to the plants, provided, of course, the plants are in good health, and then will do for a fortnight or so cut for decoration. Now that hybrid *Cypripediums* are so plentiful, a great variety can be grown in a small house, and the colours range from almost black to white, although the darkest and the lightest are species, namely, *C. Charlesworthii* Richard Moore, and *C. bellatulum album*. Growers who do not go in for choice varieties can get a good range of colours with such varieties as *C. niveum*, *insigne* *Sanderæ*, i. *Sanderianum* and a host of yellow *insignes*. For a large yellow and white form *C. × aureum* Surprise still holds its own, and is not now an expensive variety. Then there are such varieties as *C. × aureum* (*Edippe*, *× Mrs. Wm. Mostyn*, *× Euryades*, and many other richly-coloured things, and for elegant flowers *C. × Minos Youngii*, *× vexillarium*, *× Baron Schröder*, *× Arthurianum*, and other *Fairrieanum* hybrids. *C. × Lceanum*, too, forms a pretty class for those who like intermediate colours, and amongst the species *C. Charlesworthii* and *C. Spicerianum* make a charming contrast when grouped together.

While the plants are in flower they should be grouped at one end of the

house, or if a flowering house can be spared they will keep better still, and well repay the trouble of removing them. Then the *Cattleyas*, *Lælias*, *Oncidiums*, and anything else that happens to be in flower, will make a very pretty group, and take off the flatness of the *Cypripediums*. When there are only *Cypripediums* to group they take a lot of arranging to make an effective group, but a few *Cattleyas* or *Oncidiums* for a background makes it very effective. When a lot of plants are in flower together we find it better to keep one house for them, even if we have to change a lot of plants, and put some in houses not used for them in their growing season. It does not keep all the houses on the dry side while a plant or two are in flower, and the plants can all be treated as usual, while the flowering house can be kept at 55° to 60° , which temperature will be found to suit almost everything just while it is in bloom, and not so much moisture used, although the plants should not be allowed to get dry at the roots.

The *Cypripedium* houses should be kept at a nice growing temperature, and ample moisture used, even during the dull weather. Where a mixed lot are grown together 65° will suit all varieties, and where *C. insigne*, *Spicerianum*, *Charlesworthii* and their hybrids can be grown in a separate house 55° to 65° will suit them. *C. bellatulum*, $\times$ *aureum*, $\times$ *Euryades*, $\times$ *Thalia*, $\times$ *Minos*, and most *Fairrieanum* hybrids like a slightly higher temperature, 60° to 70° . If a plant is not growing well, I find it a good plan to try it warmer or cooler, no matter what it is supposed to grow at, till you get the right temperature for it, and let those laugh who like so long as it is growing and flowering well.

CALANTHES will be pushing up their flower spikes, and should be kept moist at the roots until the spikes are fully developed, when they can be gradually dried off. A little manure water will assist them to form good spikes, and also make the flowers a brighter colour. They should be kept as near the light as possible, to help them to form stout spikes, then the flowers will last much longer, and it will also help to ripen the bulbs. *Pleiones* will also be pushing up their flower buds, and will need similar treatment, and should be kept in a temperature of 60° to develop their flowers properly.

CATTLEYS AND *LÆLIAS* of the autumn-flowering section will soon make a fine display. Plants that are pushing up their spikes should have a liberal supply of water at the roots, and should be staged in a light position in the house. In foggy weather we find we do not lose our buds if the temperatures are raised 5° , and plenty of moisture kept in the house, as the moisture fills up the crevices and keeps the fog out. Working on this principle we have not lost our *Lælia anceps* buds for several years, as we used to do when keeping the houses dry. Slugs and cockroaches must be trapped, or they will soon spoil a spike. Lettuce leaves will soon clear out

slugs, especially if looked over after dark, and a little arsenic and treacle on small pieces of bread will keep cockroaches down. Plants that have finished flowering can be kept drier till they commence to grow again, but not dry enough to shrivel the bulbs, or they will soon look sickly.

DENDROBIUMS that have finished growing should be given air on a fine day, and syringed and encouraged in every way possible to make hard, plump bulbs. The house should be damped whenever it gets dry, as too dry an atmosphere will dry the pots and cause more watering than when the house is kept moist. Seedling Dendrobies should be grown on without resting until they get to flowering size, or they will take a good many years to flower, and that generally bars one getting anything up-to-date from them. Should any bulbs show flower a little out of season do not put them into a hot temperature, or the buds will not develop: leave them in the ripening house until the buds have formed, then there will be no danger of losing them. With a good collection of these one need not be short of showy flowers during the winter and early spring, and the hybrids are not so difficult to grow as the species are after they have been in cultivation for a few years, and they are not very particular where they are grown so long as they get plenty of light. *Cœlogyne cristata* can also be ripened with the Dendrobies, as it requires much the same treatment. *Oncidiums*, such as *Forbesii*, *crispum*, *varicosum* *Rogersii*, *Odontoglossum grande*, *Lælia anceps*, and *autumnalis* will do well in the same house, if one is short of room for the winter, and the house is not allowed to fall below 55°.

ODONTOGLOSSUM CRISPUM.—Plants that were potted in the early part of September will now be getting established again, and should be given more air and water. The supply must be increased as the pots get filled with roots again, but do not overwater, or the compost will soon get sour, and the plants get sickly. It is better to let the plants get a little dry than give too much after repotting. A spray overhead on fine days will keep the foliage clean, and prevent thrip getting a start. Keep the house well damped, and give ventilation every time the weather will permit. A little air can be given every day if given carefully. Do not make a draught when opening the ventilators, or the plants will be checked in their growth.

During the dull months, when there is not much potting to be done, the plants should be gone round, and any that need it be sponged, especially *Cattleyas* and *Lælias*, pots kept clean, houses washed down, and walls lime-washed. Some growers object to lime-washing, preferring to let moss grow on the walls, but personally I prefer the light and cleanliness to be had from a white wall; it also gets rid of woodlice, ants, &c., when quick-lime is used and put on while it is hot. It also sticks better if put on while hot. If damping is properly seen to plenty of moisture

can be got in a house, without allowing the walls to get slimy and green enough to hold moisture. Potting composts can also be prepared for use when the busy season comes round again, then nothing has to be neglected when it ought to be growing. Loam, peat, and crushed crocks can be mixed for *Cypripedes* and put in bags, *Osmunda* and *Polypodium*, fibre and leaves, for *Cattleyas*, &c. The moss need not be added till the compost is required for use. A bag of crushed crocks will always be found useful in the busy season, and crocks for crocking pots prepared for use now, all saves time later on.

TEMPERATURES will be safe if kept as advised in last month's Calendar. Where blinds are used for winter they should be run down at night, as we may expect frosts at any time now, and they are a great help in keeping the temperatures correct. Keep the fires in hand, and do not let the temperatures run up and down. Anyhow keep them as even as possible, and one can get through the winter much more easily.

WATERING will have to be done carefully now the days are getting short. Do not overwater, but give sufficient to keep the plants from getting dust dry. If uncertain whether a plant is dry enough for watering, don't be tempted to water it on chance; leave it another day or two, and it will grow all the better for it. If plants are looked over about twice a week one will not be tempted quite so often, and the plants will take no harm when standing from say Wednesday till Saturday. Of course I am not including seedlings, which must be carefully watched practically day and night.

The warm houses will need damping down at least twice a day, the cooler ones in the morning, and if dry again in the afternoon.

ORCHIDS AT RAWDON, LEEDS.

BEING in the neighbourhood of Rawdon recently, I decided to pay a visit to the Orchid Nursery of Messrs. J. W. Moore, Ltd. I was well rewarded, for the collection proved to be a most interesting one, and any lover of Orchids should not miss the opportunity of a visit, should it occur.

Entering the corridor of the first range of houses, one comes in contact with a group of choice flowering plants, well arranged with palms and ferns, and some well-grown specimens of *Cymbidium*, which give a pleasing effect to the entrance. The first range running out of the corridor contains some very choice *Paphiopedilums*, including *P. × Rainbow superbum*, *× Emerald*, *× aureum* var. *(Edippe)*, *× aureum Surprise*, the beautiful *P. × Maudiaë*, a very healthy batch of *P. Fairrieanum*, and numerous other species. This house also contains a splendid collection of very interesting and many rare *Bulbophyllums* and *Cirrhopetalums*. I noted in flower *B. barbigerum*, *B. Godseffianum*, *B. calamarium*, *B. maculosum*, *C. ornativissimum* and *C. biflorum*, and among those not in bloom were such

interesting ones as *B. virescens*, a very fine specimen, *B. cupreum*, *B. grandiflorum*, *B. Watsonianum*, *B. Sillemianum*, *B. tremulum*, *B. orthoglossum* (very rare), and a very distinct species from S. Nigeria, *Cirrhopetalum Rothschildianum*, *C. Wallichianum*, *C. Makoyanum*, *C. appendiculatum*, and some interesting species of *Megaclinium*, one worth noting being *M. purpureorachis*.

The second house of this range contains a most complete collection of *Paphiopedilum insigne*, including such good and up-to-date varieties as King Edward VII., Greenbank var., Hodgkinsoni, zebrinum, magnificum, Harefield Hall var., Sanderæ, Sanderianum, &c., and following these was a collection of *P. × Leeae* varieties, all showing well for flower, and including *L. Clinkaberryanum*, Model, The Globe, Minerva, virginale, magnificum, &c. On the opposite stage, and growing particularly well, was a miscellaneous lot of plants, principally of botanical interest. *Maxillarias*, *Brassias*, *Cœlias*, &c., also a fine batch of the beautiful *Vanda Kimballiana*.

The third house of this range contains a fine lot of *Masdevallias*, in clean, vigorous condition, and including many rare and interesting species. The opposite side is staged with good plants of the Brazilian *Oncidiums*, as *Forbesii*, *Marshallianum*, *crispum*, and *varicosum Rogersii* with very strong spikes.

The second range commences with a collection of rare *Aërides*, *Vandas*, *Angræcums*, and *Saccolabiums*—a very interesting lot, but too numerous to specify—and the next division contains a wonderful lot of *Lælio-cattleyas*, in perfect condition, a great many showing strong flower sheaths and making roots galore. The third division is used as a warm house, and here are some fine *Phalænopsis amabilis* *Rimestadiana*, *Schilleriana*, &c., also a splendid batch of the pretty *Dendrobium Phalænopsis*, showing good strong flower spikes. Suspended from the roof is an interesting lot of *Catasetums* and *Cynoches chlorochilon*. The latter were imported recently and are getting well established, and some of them are grand specimens with three and four new bulbs, all throwing strong flower spikes. The side stage is occupied with seedling *Paphiopedilums*, a choice batch of plants, all with parentage of up-to-date varieties, and some showing signs of flowering. It should prove very interesting to see the results.

The next range commences with a house containing nothing but *Vanda cœrulea*, all smart-looking plants. Messrs. Moore make a speciality of this Orchid, as is proved by the fine specimens and the large number of flower spikes, about 300, which are showing; while among those in bloom one could pick out many large, bold flowers of the deep blue type. The next division is used as a *Cattleya* house, and on entering one is struck with the clean and sturdy appearance of the plants. Like most of their plants, these are potted in the special *Osmunda* fibre, with which the firm has made a name for itself.

Several plants were knocked out for me to see how the plants root into this compost, and it caused no surprise when I was afterwards shown the enormous stock of this material that the firm holds. The plants throughout the whole Nursery give a decided recommendation to the material.

Next comes the *Odontoglossum* house, one side of which contains all choice and up-to-date hybrids and good spotted forms of *crispum*, while the middle contains some fine large specimen *O. crispum*, some noble specimens of *O. Edwardii*, with enormous spikes, and numerous other species. The other side-stage contains large batches of *O. Hallii*, *O. Pescatorei*, and all the other useful *Odontos* in fine condition.

Standing apart from the main block are two houses, one of which contains the *Dendrobiums*, now resting and ripening their sturdy bulbs, while the other is devoted to miscellaneous plants, as *Trichopilias*, *Miltonias*, warm growing *Odontoglossums*, as *hastilabium*, *grande*, &c., and finally a fine batch of *Lycastes*, among which *L. Skinneri* is well represented.

MAC.

HABENARIA CARNEA.

A GROUP of this very beautiful *Habenaria* is making a fine display at Kew, three pans of it bearing fifteen scapes, the best of which has twelve flowers. It is surprising that so beautiful a plant should be so seldom met with, but this may be partly due to the difficulty of obtaining it, and to some extent also to that sometimes experienced in afterwards cultivating it. The annexed beautiful specimen was grown in the collection of H. J. Elwes, Esq., Colesborne Park, Cheltenham, by Mr. Walters, and gives an excellent idea of what the species is capable of under suitable conditions. It had received a Cultural Commendation from the Royal Horticultural Society on October 21st, 1902, when bearing three spikes, but a year later produced eight spikes, as shown, the plant being then photographed by Mr. J. E. Edwards, Mr. Elwes' secretary. Its culture presents little difficulty if only the proper conditions can be secured, and Mr. Walters remarks that success or failure depends chiefly on careful potting and watering. As soon as the plants are at rest, they should be re-potted, care being taken in turning them out, as the majority of the new tubers will be found among the drainage of the pan. Put in a good porous compost of peat, loam, and sphagnum, adding finely-broken crocks and sand in quantity. Place them in a rather shady corner of the Warm house, where they will be free from drip and the syringe, as water, if allowed to lodge on the plants, soon disfigures the beautiful foliage. The rate at which this species increases is somewhat remarkable, for the plant figured had five tubers when potted in December, 1901, but when repotted in December, 1903, it had nineteen tubers. The leaves are of a peculiar shade of dull olive green, prettily



Fig. 40. HABENARIA CARNEA.

spotted all over with white, and the flowers are of a delicate shade of flesh pink. The species was discovered at Pulau Langkawi, a group of

limestone islands north of Penang, by C. Curtis, who sent plants to Kew, where they flowered in the autumn of 1891. A dried specimen collected by him shows a spike of fourteen flowers. Curtis describes it as one of the most beautiful Orchids of the district, and varies considerably in the colour of both flowers and leaves. The former, which last in perfection for six to seven weeks, vary from deep salmon to ivory white, and the latter from light green to dark brown, and dark brown spotted all over with white. It is of easy culture, requiring the same treatment as *Calanthes* of the *vestita* group, with which it is found associated.

SOCIETIES.

ROYAL HORTICULTURAL.

A MEETING of this Society was held at the Royal Horticultural Hall, Vincent Square, Westminster, on September 1st, when there was a very fine display of Orchids, and the awards consisted of four medals, one First-class Certificate, four Awards of Merit, and three Botanical Certificates.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. Day), staged a choice group, to which a Silver Flora Medal was given. It contained a fine specimen of *Miltonia candida grandiflora*, bearing five spikes, *M. spectabilis* Moreliana, *M. × Bleuana splendens*, some good *Cattleyas*, including the handsome *C. × calummata*, *C. × Pittiana*, *C. × fulvescens superba*, and a pretty hybrid between *C. Schröderæ* and *C. Schilleriana*, some good *Odontoglossum Harryanum* and other *Odontoglossums*, *Brassocattleya Madame Hye*, *Læliocattleya Vesta* (*C. velutina* × *L. crispa*), and *L.-c. Elva* var. *St. Vincent* (*L.-c. Ingramii* × *C. Warscewiczii*), a very beautiful form which received an Award of Merit. It had deep rose-coloured sepals and petals, and the lip ruby purple in front, becoming paler behind, and having a pair of large yellow blotches in the throat.

Sir Trevor Lawrence, Bart., K.C.V.O., Burford, Dorking (gr. Mr. White), received an Award of Merit for a good plant of *Catasetum Russellianum*, bearing a fine spike of its pretty pale green and white flowers, and Botanical Certificates for *C. Imschootianum*, bearing an erect spike of greenish yellow flowers, for the lavender-coloured *Calanthe Cecilæ*, and for *Cymbidium lancifolium*.

Lt.-Col. G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), sent *Brassocattleya Siren superba* (*C. Skinneri* × *B. Digbyana*), a pretty rose-purple hybrid with a pale throat to the lip, *Læliocattleya epicasta*, Westonbirt var., and *L.-c. Golden Oriole*, var. *tigrinum*, the latter a bright yellow form, veined with red-purple on the sepals and petals, and the front of the lip of the latter colour. An Award of Merit was given to *Sophro-Lælio-Cattleya Danæ superba* (*C. Harrisoniana* ×

Sophrolælia læta Orpetiana), a very fine rose-purple form, paler toward the base of the segments, and the lip light yellow with the front lobe rich purple.

A. G. Groves, Esq., Horfield, Bristol (gr. Mr. Gostling), sent a fine well-bloomed specimen of *Cypripedium* × *Kubele grandis*.

Mr. G. W. Miller, Wisbech, sent a hybrid *Cypripedium*, and several good *Læliocattleyas*.

R. G. Thwaites, Esq., Chessington, Streatham (gr. Mr. Black), sent *Cattleya* × *Euphrasia*, and three pretty forms of *C.* × *Adula* (bicolor × *Hardyana*), an ally of the handsome *C.* × *Iris*.

Messrs. Sander & Sons, St. Albans, staged a very beautiful group, which gained a Silver Flora Medal. It contained a remarkably fine *Brassocattleya* Madame Charles Maron, Sander's var. (*C.* *Warsewiczii* × *B.* *Digbyana*), having a very large deep purplish-rose flower, with a pale yellow throat, and some purple lines at the base, to which a First-class Certificate was given. Round this were grouped some beautiful specimens of *Vanda cœrulea* and *Cattleya Leopoldi*, with a fine *Lælio-cattleya illuminata*, good examples of *Cypripedium Fairrieanum*, *Aërides quinquevulnerum*, *Sigmatostalix radicans*, and many other interesting things.

Messrs. Charlesworth & Co., Heaton, Bradford, also staged a choice group, consisting largely of hybrids, which was awarded a Silver Flora Medal. It contained a very handsome form of *Sophrocattlælia Marathon* (*Sophrolælia Psyche* × *C.* × *Empress Frederick*), having the sepals and petals yellowish tinged with rose, and the front of the lip very rich ruby crimson, the handsome *Lælio-cattleya Lambeauiaë* (*L.* *præstans* × *C.* *Hardyana*), *L.-c.* *Chloe* (*L.* *præstans* × *C.* *labiata*), a very richly coloured hybrid, a fine dark *L.-c.* *callistoglossa*, and other good *Lælio-cattleyas*, with many other fine things. An Award of Merit was given to *Cattleya* × *Rhoda* (*C.* × *Iris* × *Hardyana*), a very handsome variety, most like a large *C.* × *Iris*, and having cream yellow sepals and petals tinged with salmon red, and the lip ruby red with a paler margin.

Messrs. J. W. Moore, Ltd., Rawdon, Leeds, received a Silver Banksian Medal for a good group, including the deep rose-coloured *Cattleya* × *Atalanta illuminata*, *Masdevallia Reichenbachiana*, *M. macrura*, and other interesting *Masdevallias*, *Cœlogyne corrugata*, *Cirrhopetalum biflorum*, a pretty Javan species bearing twin-flowered scapes, hybrids of *Cypripedium Fairrieanum*, and other interesting things.

Messrs. Wm. Bull & Sons, Chelsea, sent a small group of *Cattleya* × *Iris*, and other pretty hybrids.

Mr. A. W. Jensen, Lindfield, Hayward's Heath, sent plants of *Vanda cœrulea*, and a small form called *V. cœrulea Jenseniana*, having a mauve-coloured lip, and some mauve veining on the petals.

Messrs. Stanley & Co., Southgate, sent a pretty little group, including a fine example of *Cypripedium* × *A. de Lairesse* with three spikes, forms of *Cattleya* × *Minucia*, two plants of *Cycnoches chlorochilon*, and other interesting things.

At the meeting held on September 15th there was again a fine display, and the awards consisted of seven medals, one First-class Certificate, and one Award of Merit.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. Day), staged a rich and varied group, to which a Silver Flora Medal was given. It contained a good plant of the rare *Dendrobium Williamsianum*, the curious little *Angræcum distichum*, the richly-coloured *Miltonia vexillaria Leopoldi*, *Cypripedium* × *H. S. Goodson* (× *Swinburnei* × *T. B. Haywood*), a large and handsome hybrid, *C.* × *Olga Bradshawe*, *C.* × *Fairlawn*, and a fine series of *Cattleyas*, *Læliocattleyas*, *Odontoglossums*, and other good things.

Sir Trevor Lawrence, Bart., K.C.V.O., Burford, Dorking (gr. Mr. White), received an Award of Merit for *Cattleya* × *Maroni aurea*, a very fine variety, with broad citron-yellow sepals and petals, and the lip ruby-crimson, shading off to rose in front, and the disc golden-yellow with some dark red markings at the base.

Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. Chapman), sent *Cattleya* × *Angela* (*intermedia nivalis* × *labiata Cooksoniæ*), a very pretty white-flowered hybrid of good shape.

Lt-Col. G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), sent *Sophrocatlælia Medeia superba*, and *Lælio-cattleya Elva superba*, both very richly coloured, also *Cypripedium* × *Rossetti magnificum* (*insigne Sanderianum* × *Maudia*), a very beautiful yellow flower, with some green veining on the dorsal sepal.

R. G. Thwaites, Esq., Chessington, Streatham (gr. Mr. Black), sent the pure white *Cattleya* × *Dusseldorffii* var. *Undine*, *C.* × *Pittiana* var. *J. M. Black* (*granulosa Schofieldiana* × *Dowiana aurea*), and a series of the beautiful *C.* × *Adula* (*bicolor* × *Hardyana*), showing a great amount of variation in the colour and details of the flowers.

Messrs. Charlesworth & Co., Heaton, Bradford, showed a choice group, which gained a Silver Flora Medal. It contained some beautiful forms of *Lælio-cattleya luminosa* and other *Lælio-cattleyas*, some of them flowering for the first time and very promising. *Cattleya Harrisoniana alba*, *C. Gaskelliana alba*, *C.* × *Enid*, *C.* × *Alicia* (× *Iris* × *labiata*), *C.* × *Lord Rothschild* var. *delicata*, the handsome *Zygopetalum Roeblingianum*, *Z. Burkei*, *Cypripedium* × *Io-Charlesworthii*, having the dorsal sepal veined with deep rose, the handsome *C.* × *Morgania* *langleyense*, *C.* × *Daisy Barclay*, a beautiful cream-white flower spotted and veined with claret-purple, and many others.

Messrs. Stanley & Co., Southgate, received a Silver Banksian Medal for a pretty little group, containing several good plants of *Cypripedium* × *A. de Lairese*, and a series of *Cattleya Gaskelliana* and others. A First-class Certificate was given to *C. Harrisoniana alba* Stanley's var., an exceptionally large and beautiful white variety, with very broad segments, and the disc of the lip clear yellow.

Messrs. James Cypher & Sons, Cheltenham, received a Silver Banksian Medal for a tastefully arranged group, including some good forms of *Dendrobium Phalænopsis*, *Cattleya Gaskelliana*, *C.* × *Pittiana*, several plants of *Oncidium Papilio* and *Vanda cœrulea*, some good *Lælio-cattleyas*, *Zygopetalum rostratum*, *Cypripedium* × *Maudia*, *C.* × *Eudora*, *Masdevallia Chimæra stupenda*, *M.* × *Bocking Hybrid*, *Miltonia* × *Bleuana*, and other interesting things.

Messrs. Hugh Low & Co., Enfield, received a Silver Banksian Medal for a very pretty group, including the clear yellow *Oncidium oblongatum citrinum*, some good forms of *Cattleya* × *Iris*, *C. Gaskelliana Phyllis*, a delicately tinted form, *Dendrobium sanguinolentum*, the pretty natural hybrid *D.* × *Leeanum*, *Miltonia Regnellii purpurea*, *Vanda Kimballiana*, *Stanhopea oculata*, *Masdevallia muscosa*, *M. peristeria*, the graceful white *cœlogyne Veitchii*, *Cypripedium* × *Maudia*, *C.* × *Mrs. F. L. Ames*, *C.* × *Watsonianum*, &c.

Messrs. J. W. Moore, Ltd., Rawdon, Leeds, received a Silver Banksian Medal for a good group, including fine examples of *Odontoglossum Harryanum* and *Vanda cœrulea*, *Cirrhopetalum appendiculatum*, *Trichocentrum albopurpureum*, *Cynoches chlorochilon*, some good *Lælio-cattleyas*, *Brassocattleyas*, and other interesting species and hybrids.

Messrs. Sander & Sons, St. Albans, also received a Silver Banksian Medal for a rich and varied group, in the centre being *Cypripedium* × *Eclipse* (*Stonei* × *Calypso*, *Oakwood* var.), a very handsome novelty, having the dorsal sepal white, heavily lined with dark purple at the base, and the petals and lip yellowish tinged and veined with purple. Round it were arranged plants of *Vanda cœrulea*, *Cattleya* × *Iris inversa*, *C.* × *Davisii*, *C. Gaskelliana alba*, *Phalænopsis Esmeralda atrorubens*, *Cœlogyne Micholitzii*, *Brassolælia Helen* var. *amabilis*, *B.-l. Doris*, *Brassocattleya St. Alban* (*B. Digbyana* × *C. Schilleriana*), having greenish sepals and petals, and the lip white striped with rose in front, *B.-c. Madame Chas. Maron*, and other interesting things.

Messrs. Wm. Bull & Sons, Chelsea, sent a pretty group of hybrid *Cattleyas*.

A third meeting was held on September 29th, and brought together a magnificent display of Orchids, which, however, were rather inconveniently

crowded in one of the annexes, owing to the large number of other exhibits. The awards consisted of four medals, four First-class Certificates, three Awards of Merit, and five Botanical Certificates.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. Day), staged a very beautiful group, to which a Silver-gilt Medal was given. It contained many good plants of *Cypripedium insigne* Sanderæ, *C. Fairrieanum*, and several good hybrids, *Miltonia vexillaria* Leopoldi, a fine *M. × Bleuana*, *Odontoglossum grande*, some good *O. crispum*, *Lælio-cattleya* Remula, and various others, with a selection of *Brassocattleyas*, fine forms of *Cattleya × Iris*, &c. First-class Certificates were given to *Odontioda Charlesworthii*, Goodson's var., a fine form bearing five brilliant ruby crimson flowers, and to *Cattleya × Venus* (*C. × Iris × Dowiana aurea*), a beautiful hybrid having broader segments than *C. × Iris*, and the colour orange yellow tinged with reddish bronze, while the lip is ruby crimson, with deep yellow veining on the lower part. An Award of Merit was given to *Lælio-cattleya* Golden Oriole, Goodson's var. (*L.-c. Charlesworthii × C. Dowiana*), an orange yellow form, with deep bronzy red markings on the lip.

Lt.-Col. G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), received a First-class Certificate for *Cypripedium × Bianca superbum* (*Leeanum Prospero × insigne* Sanderæ), a remarkably fine hybrid, closely resembling the second parent in form, but more compact in shape. The petals and lip are bright clear yellow, also the lower third of the dorsal sepal, except that the markings of *C. insigne* Sanderæ can be traced as minute dark dots, while the upper two-thirds is pure white. An Award of Merit was given to *Soprocattleya × Saxa*, Westonbirt var. (*C. Trianæ × S. grandiflora rosea*), a brilliant violet-purple flower of excellent shape, with an orange tube to the lip, and the front lobe dark purple.

Baron Sir Henry Schröder, The Dell, Egham (gr. Mr. Ballantine), staged a noble specimen of *Oncidium incurvum*, bearing eighteen inflorescences of its pretty white and purple flowers.

Sir Trevor Lawrence, Bart., K.C.V.O. (gr. Mr. White), received Botanical Certificates for *Cynorchis purpurascens*, *Habenaria geniculata*, a white-flowered Himalayan species, and *Cirrhopetalum Andersoni*, another Himalayan plant, having umbels of whitish flowers prettily spotted with light purple.

J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. Davis), received a Botanical Certificate for a good plant of *Catasetum maculatum*, an ally of *C. macrocarpum*, having greenish flowers spotted with dusky brown, and the mouth of the lip somewhat contracted and entire.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), sent *Odontoglossum grande* Pittianum, remarkable for having lost the usual

brown markings, and *Acineta densa*, the latter receiving a Botanical Certificate.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), sent *Odontoglossum* × *Carmania rosefieldiense*, bearing a fine inflorescence of fourteen flowers and buds, the sepals and petals being bright yellow, heavily blotched with dark brown, and the lip white with some purple markings round the crest.

F. J. Hanbury, Esq., Clapton, showed *Cypripedium Fairrieanum*, Brockhurst variety.

W. H. Perry, Esq., Upper Norwood (gr. Mr. Buckingham), sent a fine *Cattleya Warscewiczii* bearing an inflorescence of seven flowers.

R. G. Thwaites, Esq., Streatham (gr. Mr. Black), sent a small group, including two good *Odontoglossum* × *Rolfæ*, *Cattleya* × *Euphrasia*, *C.* × *Iris*, five plants of *Cattleya* × *Adula*, showing great variation in colour, and four plants obtained by crossing *C. Harrisoniana alba* and *C. Gaskelliana alba*, all of which had light rose-pink flowers, and were referred to *C.* × *Miss Williams*.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a choice group, which gained a Silver Flora Medal. It contained two beautiful examples of *Vanda cœrulea*, one bearing a spike of seventeen fine blooms, *V. Kimballiana*, the handsome *Sophrœcatlælia* × *Marathon* (*Sophrœcatlælia Psyche* × *Cattleya Empress Frederick*), a very beautiful flower, an unnamed *Sophrœcatlælia* from S.-l. *Psyche* × L.-c. *Haroldiana*, having deep yellow sepals and petals suffused and veined with crimson, and the undulate lip darker, with a deep yellow throat, a third *Sophrœcatlælia*, from S.-l. *Gratrixiæ* × *C. Dowiana aurea*, having very broad sepals and petals, marbled with dull orange and red, and the margin of the lip darker, a fine *Zygopetalum* × *Roeblingianum*, *Zygocolax Wiganianus*, *Warscewiczella cochleata*, *Miltonia* × *Binoti*, the rare *Odontoglossum blandum*, *O. bictoniense album*, the deep crimson *Sophrœcatlælia heatonensis*, some good *Lælio-cattleya luminosa*, *callistoglossa*, *Aphrodite*, *Elva*, *illustris*, and an unnamed one from *C. Bowringiana* × L.-c. *Haroldiana*, of good shape and deep amethyst-purple colour, *Cycnoches peruvianum superbum*, a fine form bearing two racemes of male flowers, some good *Brassocattleyas* and forms of *Cattleya* × *Iris*, *C. Aliciæ* (*C.* × *Iris* × *labiata*), a large lilac-rose flower, most like the former in shape, but having rather larger side lobes, and a broad light purple front lobe, with some yellow in the throat, also a fine form of *C.* × *Lord Rothschild*, having white sepals and petals, and a richly coloured lip. This was raised from *Cattleya Gaskelliana alba* × *C. Dowiana*, and is said to be one of a batch of four or five, all showing the same character.

M. Ch. Maron, Brunoy, France, showed a fine plant of *Lælio-cattleya Henry Greenwood*, a good *Brassocattleya*, a plant of *Cattleya* × *Maroni*

bearing a fine head of ten flowers, and *C. × Rutilant* (*× Maroni × Fabia Vigeriana*), a very handsome hybrid, which received a First-class Certificate, having a large reddish crimson flower of excellent shape and a rather darker glowing crimson lip.

Messrs. James Cypher & Sons, Cheltenham, received a Silver Banksian Medal for a very pretty group, including many good *Cypripediums*, noteworthy among them being the fine *C. × Transvaal superbum*, two good *C. × Maudiae*, *C. × Milo*, *Westonbirt* var., *C. × triumphans*, *× Olivia*, *× Niobe*, *Fairrieanum*, &c.

Messrs. Sander & Sons, St. Albans, received a Silver Banksian Medal for a good group, including several *Cypripedium Fairrieanum* with about two dozen flowers, *C. × Hitchinsiae*, and several others, a good example of *Catasetum Russellianum*, *Ancistrochilus Thomsonianus*, *Miltonia spectabilis Moreliana*, *Lælio-cattleya Hildegard*, *Nysa*, *Lycidas*, and *La France* (*L. tenebrosa × C. bicolor*), and other interesting things.

Messrs. Hugh Low & Co., Enfield, sent a pretty little group, including *Cattleya × Iris*, *C. × Atalanta*, *Oncidium Lanceanum*, *Vanda Kimballiana*, *Lælio-cattleya bleckleyensis*, *Cypripedium Godefroyae leucochilum*, *C. × triumphans*, and others.

Messrs. J. & A. A. McBean, Cooksbridge, sent a small group, including *Odontoglossum crispum* and *Harryanum*, with *Cattleya × Iris*, *Epiphronitis Veitchii*, *Oncidium bicallosum*, *Cypripedium × Maudiae*, and others.

Mr. G. W. Miller, Wisbech, sent a plant of *Lælio-cattleya Cassandra*.

Messrs. Moore, Ltd., Rawdon, Leeds, sent two fine forms of *Cattleya × Iris*, *Cypripedium Charlesworthii magnificum*, and an inflorescence of *Neobenthamia gracilis*.

Messrs. Stanley & Co., Southgate, sent *Cattleya × F. W. Wigan*, *Cypripedium bellatulum*, and *C. × A. de Lairese*.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

A MEETING of this Society was held at the Coal Exchange, Manchester, on September 3rd, when there were many evidences of the season's revival, several good groups of plants being exhibited. The following members of the Committee were present:—Messrs. E. Ashworth (Chairman), R. Ashworth, Thorp, Ward, Warburton, Shill, Upjohn, Ball, Keeling, Holmes, Cypher, Ashton, Parker, and Weathers (Secretary).

Richard Ashworth, Esq., J.P., Newchurch (gr. Mr. Fletcher), staged a bright and varied group, which gained the Society's Silver Medal. The chief items were *Cypripedium × Aphrodite*, *C. × gigas Corndean Hall* var., several good *Odontoglossum crispum*, *Cattleya × Hardyana*, and a distinct hybrid, *Lælia præstans × L. tenebrosa*, with a very dark labellum, whilst centrally stood a well flowered specimen of *Miltonia candida grandiflora*.

J. McCartney, Esq., Hey House, Bolton (gr. Mr. Holmes), staged an interesting group of *Lælias* and *Cattleyas*, a bright looking flower of *C. Gaskelliana picturata* gaining an Award of Merit. The group included *C. Gaskelliana alba*, several good specimens of *C. Harrisoniana*, *C. Leopoldi*, *C. granulosa*, *Lælio-cattleya bleckleyensis*, *L.-c. callistoglossa*, *Cypripedium* × *Clinkaberryanum*, the handsome *C. × Chas. Richman*, &c. (Silver Medal).

Mr. J. Birchenall, Alderley Edge, showed a small group, which included *Miltonia* × *Lamarcheana*, *Bollea Lalindei*, a curious species of *Catasetum*, and *Cypripedium* × *Oberon*.

Mr. Shackleton, Gt. Horton, Bradford, showed *Cypripedium* × *Leoneæ*, *C. × Maudiaë*, and *C. × vexillarium*.

Z. A. Ward, Esq., Northenden (gr. Mr. Weatherby), staged a fine group, in which half a dozen plants of the beautiful and variously-tinted *Cattleya* × *Iris* were a prominent feature. I noted also a well-flowered plant of *Oncidium incurvum*, *Cypripedium* × *Mahleræ*, *C. × A. de Lairesse*, *Cattleya granulosa*, and two or three plants of *C. Dowiana aurea* × *Harrisoniana* (Silver Medal).

E. Rogerson, Esq., Oakdene, Didsbury (gr. Mr. Price), showed the rare and beautiful *Cypripedium* × *Princess* in two fine and well grown plants, *Lælio-cattleya Mandarin*, and *Cypripedium* × *Priceanum* (*Harrisianum* × *violaceum*), the latter gaining an Award of Merit.

Chas. Parker, Esq., Ashton-on-Ribble, Preston, showed a nice group of *Cypripediums*, gaining a Bronze Medal. *C. × vexillarium* var. *Rougieri* was given an Award of Merit, and I noted a good *C. × Massaianum superbum*, *C. × Mahleræ*, Young's var., very good, *C. callosum Sanderæ*, *C. × Gowerianum magnificum*, &c.

Max Isaac, Esq., Blundellsands, Liverpool (gr. Mr. Driver), showed a fine *Cypripedium* × *Maudiaë magnificum*, *C. × Chas. Canham*, *Oncidium Wentworthianum*, and a well flowered *Lycaste Deppei*.

H. J. Bromilow, Esq., Rainhill, Liverpool (gr. Mr. Morgan), gained an Award of Merit for *Cypripedium* × *Germaine Opoix* Westfield var. He also sent *C. × Rappartianum*, and *C. × Maudiaë*.

G. Shorland Ball, Esq., Burton, Westmoreland (gr. Mr. Herdman), staged a very fine group, and gained Awards of Merit for *Cypripedium* × *Baron Schröder* var. *ardens*, *C. × Victory* (*œnanthum* × *triumphans*), *Cynoches chlorochilon*, and *Brassia Wrayæ*, and Botanical Certificates for *Eria* species and *Oncidium* species. I noted also a nice piece of *Cœlogyne corrugata*, the beautiful *Cypripedium* × *Lecanum* Lord Ossulton, *C. × Maudiaë*, *C. × Leoneæ*, *C. × Milo magnificum*, *C. × A. de Lairesse*, &c. The group was divided for Cup purposes and received two Silver Medals.

A. Warburton, Esq., Vine House, Haslingden (gr. Mr. Dalgleish), showed

Cypripedium $\times$ bingleyense superbum, C. $\times$ Lawrebel magnificum and Cattleya $\times$ Iris var. Othello, all of which received Awards of Merit.

S. Gratrix, Esq., Whalley Range (gr. Mr. Shill), showed the beautiful new hybrid albino Cypripedium $\times$ Rossetti (C. insigne Sanderianum $\times$ Maudiaë), in good form, and which was figured and described in detail at page 265 of your last issue. The plant was given the only First-class Certificate of the meeting.

Messrs. Moore & Co., Ltd., Rawdon, Leeds, staged an interesting group, which included many botanical species and varieties. Centrally stood a well flowered plant of Stanhopea oculata, and I noted also a nice Cypripedium $\times$ barbato-Charlesworthii, and several other Cypripediums, Lælio-cattleya Cassandra, L.-c. Geo. Woodhams, L.-c. Edwena, Cattleya $\times$ Iris, C. $\times$ elatior, &c. (Silver Medal).

AT the meeting held on September 24th the following members of the Committee were present:—Messrs. E. Ashworth (Chairman), Smith, Thorp, Ward, Warburton, Shill, Ball, Keeling, Holmes, Ashton, Cypher, Parker, and Weathers (Sec.). Over fifty plants were brought before the Committee.

Messrs. Hugh Low & Co., Enfield, staged a fine group, the beautiful Cattleya $\times$ Iris predominating. I noted also a nice hybrid between Cattleya dolosa and labiata, two plants of Lælio-cattleya Ophir, Cypripedium $\times$ Maudiaë, Oncidium Lanceanum, Zygopetalum rostratum, &c. (Silver Medal).

Max Isaac, Esq., Blundellsands, Liverpool (gr. Mr. Driver), showed Cattleya bicolor and C. $\times$ Maroni, Odontoglossum Harryanum, and a hybrid Cypripedium in which C. Charlesworthii was very apparent (Vote of Thanks).

J. McCartney, Esq., Hey House, Bolton (gr. Mr. Holmes), showed a fine group of Cattleya and Lælia species, including C. Harrisoniana, C. Gaskelliana, a fine C. Aclandiaë, C. $\times$ Maroni, Lælio-cattleya Phryne inversa, a fine L.-c. elegans, and Odontoglossum grande; whilst Cattleya $\times$ Adula, C. $\times$ Pittiana var. Princess Patricia, and C. Dowiana aurea, Hey House var., all gained Awards of Merit. The group, being divided, gained a Silver and Bronze Medal.

G. Shorland Ball, Esq., Burton, Westmoreland (gr. Mr. Herdman), staged a mixed group of good quality, many fine Cypripediums being included. C. $\times$ Niobe, Underfell var., and Oncidium Papilio, Underfell var., gained Awards of Merit; while a First-class Certificate was given to Cymbidium erythrostylum. The best of the others were Cypripedium $\times$ Maudiaë, C. $\times$ Victory, C. $\times$ Leeannum var. Lord Ossulton, C. $\times$ A. de Lairesse, C. $\times$ Baron Schröder var. ardens, &c. (Silver and Bronze Medals).

Chas. Parker, Esq., Ashton-on-Ribble, Preston, showed a small group of *Cypripediums*, receiving an Award of Merit for a good and highly coloured *C. × Lawrebel* var. *Prestona*. I noted also a fine *C. × Mahleræ*, *C. × vexillarium* var. *Rougeri*, &c. (Bronze Medal).

Messrs. Cypher & Sons, Cheltenham, showed a bright group, though many of the best things were cut flowers. I noted a good *Cypripedium × Milo*, *Westonbirt* var., *C. × Maudiaë*, *C. Fairrieanum*, *C. × triumphans*, *Zygopetalum rostratum*, a good plant of *Cattleya × Mantinii superba*, *Dendrobium Phalænopsis*, &c. (Silver Medal).

Messrs. Moore & Co., Rawdon, Leeds, exhibited a fine group, in which several good specimens of *Vanda cœrulea* of excellent type formed the centre of attraction. The group included many specimens of botanical interest. I noted *Stenoglottis longifolia*, *Octomeria diaphana*, *Bulbophyllum Godseffianum*, *B. barbigerum*, *Warszewiczella velata*, *Masdevallia macrura*, *Pleurothallis scapha*, *Odontoglossum ramosissimum*, *Cycnoches chlorochilon*, *Cattleya × Iris*, &c. (Silver Medal).

Mr. Shackleton, Gt. Horton, Bradford, showed *Cypripedium × LEEANUM*, *Highfield* var., *C. × Maudiaë*, and *Sigmatostalix radicans*.

Ed. Rogerson, Esq., Oakdene, Didsbury (gr. Mr. Price), showed *Cypripedium × Niobe Westonbirt* var., *C. × Stanley Rogerson*, and *C. × St. Mary*.

Mr. J. Birchenall, Alderly Edge, showed *Miltonia × Lamarcheana*, a distinct *Bollea Lalindei*, *Oncidium abortivum*, &c.

Messrs. Keeling & Sons, Westgate Hill, Bradford, showed a small group, in which I noted plants of *Cypripedium Fairrieanum*, *C. × Arthurianum*, *Oncidium Forbesii*, &c.

Mr. Upjohn, The Gardens, Worsley, staged a very fine group of well-grown and flowered *Odontoglossum grande*, in which I noted many varietal shades (Bronze Medal).

Mrs. Wood, Moorfield, Glossop (gr. Mr. Gould), showed a small group of *Lælio-cattleya* hybrids, receiving a Vote of Thanks.

A. Warburton, Esq., Haslingden (gr. Mr. Dalglish), staged the best group of the meeting, all the plants being of high quality. The group was divided for "cup" purposes, and gained three medals, Silver-gilt, Silver, and Bronze. A fine flower of *Cypripedium × Daisy Barclay*, with specially large and dark markings, gained a First-class Certificate, while *C. × Watsonianum superbum*, and *C. × Verdi*, a fine hybrid, gained Awards of Merit. *Cattleya Vergilius*, an albino, said to be a seedling, but more probably imported, *C. granulosa*, a pale yellow-green form, and *Odontoglossum Uroskinneri* var. *Orpheus*, a rich dark variety, also received Awards of Merit. I noted also *O. Uroskinneri album*, many well-grown *O. crispum*, several good *Cypripediums*, *Cattleyas*, &c.

J. Holden, Esq., Southport (gr. Mr. Johnson), showed *Cymbidium erythrostylum* (First-class Certificate), and *Cypripedium* × *southportense* (Award of Merit).

ERRATA.—The *Cypripedium* × *Stanley Rogerson* in the group of Ed. Rogerson, Esq., mentioned at p. 280, should read C. × *St. Mary*, and the *Cypripedium* in the collection of R. Ashworth, Esq., a few lines lower, should read C. × *Rolfei* var. *R. Ashworth* (First-class Certificate).

H. THORP.

GOVENIA LAGENOPHORA.

THE genus *Govenia* is not often met with in cultivation, but it exhibits a remarkable character which we do not remember in any other, namely that of producing a large bladder-shaped sheath, which forms a flask-like receptacle for holding water, this being well shown in *Govenia lagenophora*, which is now flowering at Kew. This species was described nearly seventy years ago, but was soon confused with another species, and has since been practically lost sight of. About a year ago a dried specimen and a pencil sketch, together with a living bulb, which had been collected in the state of Vera Cruz, were sent by M. Juan Balme, Hijo, Mexico. The bulb commenced to grow in the spring, and has now flowered, proving identical with the plant described by Lindley in 1839 (*Bot. Reg.*, xxv. Misc. p. 46). The latter flowered in the collection of John Rogers, Esq., Jun., Vine Lodge, Sevenoaks, who imported it from Mexico. The innermost sheath, which surmounts the bulb, was described as entire, and resembling a Florence flask in shape, in allusion to which the specific name (literally flask-bearing) was given. Mr. Rogers remarked that the pitcher was generally full of water, all the rain and dew which fell on it being conducted into it, and was apparently absorbed by the plant, for if not replenished it disappeared more rapidly than evaporation would account for. He added, "The plant evidently delights in water when growing, and is apparently a native of bogs and swamps."

A description of the plant was communicated by Mr. Rogers, the spike being described as bearing forty or fifty flowers, exhaling in the forenoon the fragrance of *Habenaria bifolia*, but their colour was not recorded. Lindley then remarked that Swartz's *Cymbidium utriculatum* was evidently a member of the same genus, and he therefore called it *Govenia utriculata* (*l.c.* p. 47). The original specimen is not preserved in Lindley's Herbarium, so may not have been sent, but there are wild specimens, collected by Hartweg and Meisner, apparently of later date, for they are not cited by Lindley. Bentham's Herbarium, however, contains a fine specimen, labelled "Hab. e. Mex., Lindley, 1840." This is evidently authentic, and is

probably from the same source, if not from the original plant at its next time of flowering.

The Kew plant has an ovoid-globose pseudobulb, the new growth being produced from the base, and consisting of three leaves, the petioles of which are included in the flask-like, semi-transparent, purplish sheath, which measures six inches high. The leaves are nearly a foot long, by $1\frac{1}{2}$ to $3\frac{1}{2}$ inches broad, plicate and somewhat diverging, and the effect of this is that every drop of water which falls upon them is conducted down into the flask, the arrangement being that of a tundish inserted in a bottle, which keeps the flask filled with water. The scape is also produced from within the flask, and is about 18 inches high, and now beginning to flower. The wild specimen sent is rather larger. The segments are about half an inch long, and the lateral sepals are spreading, crescent-shaped, meeting at their apex, and light yellow in colour. The dorsal sepal and petals form a kind of hood, the former being light yellow and the latter purple. The lip is about half as long as the other segments, and light yellow, with three brown spots near the apex and two light brown lines running down the disc. It is interesting to find the species in cultivation again.

Govenia utriculata, Lindl., is an allied West Indian species, of similar habit, but having white flowers, tipped with yellow (*Bot. Mag.*, t. 4151), and although Lindley afterwards made it synonymous with *G. lagenophora*, his earlier opinion appears to be the correct one.

R. A. ROLFE.

THE HYBRIDIST.

EPICATTLEYA PEARL.—A very pretty hybrid raised in the collection of Sir Jeremiah Colman, Bart., Gatton Park, Reigate, from *Cattleya Harrisoniana* ♀ × *Epidendrum ciliare* ♂. Mr. Bound, in sending a bloom, remarks that it is flowering off quite a small plant. The flower is most like an enlarged edition of the pollen parent, though modified in various respects. It measures over $3\frac{1}{4}$ inches across, and the sepals and petals are lanceolate, acuminate, widely spreading, and white, tinged with a very pale delicate pink. The lip is $1\frac{1}{2}$ inches long, deeply three-lobed, and united to the column for over a quarter of an inch at the base. The side lobes are enfolded round the column, and diverge somewhat in front, but when expanded artificially their outline forms nearly a circle, while the front margin is strongly denticulate, or almost fimbriate. The front lobe is broadly stalked, much dilated in front, with an obtuse apex and a fimbriate margin. The colour of the lip is light primrose yellow. The plant is most like a dwarf edition of the *Epidendrum* parent, the pseudobulbs being fusiform, and having the characteristic sheaths, but the older pseudobulbs are two-leaved. When knowing the seed parent one can trace its influence, though it is doubtful if it could have been

identified by examination of the flower alone, a point which emphasizes the need for careful records. It is a very interesting addition to the group, and when strong should prove very effective.

CATTLEYA × VENUS.—The recrossing of the beautiful *Cattleya* × *Iris* with *C. Dowiana aurea* has produced a very fine hybrid, a plant of which has just flowered with its raisers, Messrs. Charlesworth & Co. The segments are broader than in the primary hybrid with *C. bicolor*, though in other respects it more resembles *C. × Iris*. The colour is a beautiful combination of yellow and orange, with some deep yellow veining on the crimson lip. It was exhibited at the last R.H.S. meeting, by H. S. Goodson, Esq., and received a First-class Certificate.

ORCHIDS AT KEW.

A FINE plant of *Lissochilus giganteus* is producing a spike in the Kew collection, and as the flowers are just beginning to expand at the moment of writing it will be an interesting object during October. It has been grown in a Warm house under ordinary treatment, for it was found that the roots did not thrive so well when treated as an aquatic. The *Cynoches* and *Catasetums* have been very interesting, the former including *C. Loddigesii*, *peruvianum*, and *Egertonianum*, and the latter is producing another male spike. Of *Catasetums* may be mentioned *C. fimbriatum*, *Darwinianum*, *Lemosii*, *macrocarpum*, *maculatum*, *Russellianum*, and *uncatum*, as now in bloom, but all are male flowers. Several others are just over. There is a fine show of bloom generally, including over two dozen flowers of *Paphiopedilum Fairrieianum*, a beautiful *Vanda cœrulea alba*, a fine plant of *Neobenthamia gracilis*, *Cynorchis purpurascens* and *× kewensis*, with many other beautiful and interesting things.

ORCHIDS FROM STANLEY PARK.

Several very beautiful Orchids are sent from the collection of W. J. P. Marling, Esq., Stanley Park, Stroud, by Mr. Walton. There are two very handsome forms of *Cattleya* × *Iris*, one having bronzy-brown sepals and petals, and a bright violet-purple lip, the other lighter in colour, and the petals yellow at the margin, while the lip is deep rich crimson. *Læliocattleya elegans* var. *Sadie Lloyd* is a pretty light purple form, with the front half of the lip rich dark purple, and the side lobes much overlapping. Two forms of *L.-c. Phryne* are very beautiful, and of different shades of yellow, with the throat of the lip deeper yellow, and the front lobe and apex of the side lobes purple. *Lælia* × *Pacavia* is a very large flower, having flesh-coloured sepals and petals, and a clear light purple lip, somewhat darker at the base of the front lobe. The other two are hybrids of *Cattleya Harrisoniana* and both very pretty. The pollen parent of the first was

Lælio-cattleya elegans, with which the flower of the hybrid is comparable, except in being rather smaller. The sepals and petals are light purple, with many small dark spots, chiefly near the apex: the throat of the strongly three-lobed lip is white, and the front lobe and apex of the recurved side lobes purple, with a few purple streaks running into the white. The other is about the same size, but has broad rosy-lilac sepals and petals, a broad open three-lobed lip, which is pure white in the throat, and the front lobe and apex of the side lobes deep purple, recalling a richly coloured *L.-c. Schilleriana*. They form a very beautiful series.

ORCHIDS IN SEASON.

A FINE inflorescence of *Catasetum Imschootianum* is sent by Mr. Puddle, Scampton Hall Gardens, Billington, Yorks. It is said to have been collected by E. G. B. Meade-Waldo, Esq., in Bahia, while on a cruise with Lord Crawford in the "Valhalla," R.Y.S.

NOTES.

Two meetings of the Royal Horticultural will be held at the Royal Horticultural Hall, Vincent Square, Westminster, during October, on the 13th and 27th, when the Orchid Committee will meet at the usual hour, 12 o'clock noon.

The Manchester and North of England Orchid Society will hold meetings at the Coal Exchange, Manchester, on October 8th and 22nd. The Committee meets at noon, and the exhibits are open to inspection from 1 o'clock to 4 o'clock p.m. The following meeting is fixed for November 5th.

A very fine group of *Miltonia vexillaria*, as cultivated at Drumlanrig Gardens, Dumfriesshire, the seat of the Duke of Buccleuch, is illustrated in the *Gardeners' Chronicle* for September 5th. Mr. David Inglis, the gardener there, remarks that for many years the plants were in winter placed in the *Cattleya* house, where they grew splendidly, but did not flower satisfactorily. Three years ago it was decided to keep them all the year round at the warmest end of the *Odontoglossum* house, and since then the plants have grown splendidly and flowered with freedom. The house is a span-roofed structure, and is not an ideal one for Orchids, for it faces both north and south, and has no bottom ventilation: great care has, therefore, to be taken in admitting air by the top ventilators. The house has the advantage of remaining very cool in the warmest weather. The plants are potted and top-dressed alternately every year, during August or September. The photograph was taken by the foreman at Drumlanrig, with a pin-hole camera, made by a local plumber, and shows a very beautiful group of plants.

ORCHID PORTRAITS.

BULBOPHYLLUM GALBINUM, Ridl.—*Bot. Mag.*, t. 8216.

CATASETUM CLAESIANUM.—*Gard. Chron.*, 1908, ii. p. 211, fig. 90.

CATTLEYA HARRISONIÆ ALBA, STANLEY'S VAR.—*Journ. Hort.*, 1908, ii. p. 291, with fig.

CATTLEYA × MARONI AUREA.—*Gard. Mag.*, 1908, p. 719, with fig.

CATTLEYA × RHODA.—*Gard. Mag.*, 1908, p. 685, with fig.

CATTLEYA SCHRÆDERÆ.—*Journ. Hort.*, 1908, ii. p. 219, with fig.

CATTLEYA WARSCEWICZII FRAU MELANIE BEYRODT.—*Journ. Hort.*, 1908, ii. p. 267, with fig.

EPIDENDRUM LAMBEAUIANUM.—*Gard. Chron.*, 1908, ii. p. 228, fig. 99.

MILTONIA VEXILLARIA (at Drumlanrig).—*Gard. Chron.*, 1908, ii. p. 194, with suppl. plate.

ORCHIS (hybrid between *O. latifolia* and *O. maculata*).—*Gard. Chron.*, 1908, ii. p. 194, fig. 82.

ZYGOCOLAX VEITCHII.—*Journ. Hort.*, 1908, ii. p. 243, with fig.

ORCHID NOMENCLATURE.—It is admitted by many Orchidists that names are too freely given to Orchid varieties. Names are bestowed upon varieties in which "an extra spot can be discovered," because it is said it gives them "a commercial value," and the most trifling variation is thought sufficient to merit a designation. This is the chief evil in Orchid nomenclature, and ought to be checked. The fact is that much disappointment has already been caused to many persons by the unrestricted indulgence in this practice, and its continuance will do more harm to the Orchid interest than some suppose.—L.C. in *Journal of Horticulture*.

ANSWERS TO CORRESPONDENTS.

[Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An ADDRESSED postcard must be sent if a reply by post is desired (abroad, reply postcards should be used). Subjects of special interest will be dealt with in the body of the work].

F. H. S. *Cypripedium* × *Vanimschootianum* is a form of *C. × Leoneæ*, a hybrid between *C. callosum* and *C. insigne*. The normal and abnormal flowers on the same scape are occasionally seen.

E. P. Collett. *Paphiopedilum* × *Ashburtonæ*.

J. R. *Brassia brachiata*.

D. et L. *Sobralia Ruckeri*.

E. D. *Platanthera Susannæ*. The other matter is receiving attention.

J. F. S. Next month.

Photographs received, with thanks. E. St. D., M. J.

It will be seen from an advertisement that Mr. J. Smith, gardener to the late R. I. Measures, Esq., is seeking an engagement as Orchid Grower, and we hope that with his well-known abilities he will soon meet with something suitable.

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THE

ORCHID REVIEW:

An Illustrated Monthly Journal of Orchidology.

Contents.

	PAGE		PAGE
Albinism, Inheritance of, in Orchids	336	Hybridising Odontoglossums	348
Albinism of <i>Cypripedium Charlesworthii</i>	347	Nomenclature of Orchid Hybrids	349
Answers to Correspondents	352	Notes	351
Calendar of Operations for November	330	Orchid Portraits	352
<i>Catasetum fimbriatum</i>	335	Orchids at Westonbirt, Tetbury	321
<i>Cattleya Bowringiana</i> (fig. 43)	337	<i>Cymbidium</i> × <i>eburneo-Lowianum</i>	
<i>Cattleya</i> × <i>O'Brieniana</i>	351	fig. 41	325
<i>Cœlogyne Mooreana</i> (fig. 42)	329	Orchids at Weston-super-Mare	333
<i>Cymbidium</i> × <i>eburneo-Lowianum</i> (fig. 41)	325	Orchids in season	350
Hybridist	348	Societies	338
<i>Brassocattleya Dante</i> ...	348	Manchester and North of England	
<i>Brassolælia Cecilia</i>	348	Orchid	344
<i>Cattleya</i> × <i>Freya</i>	348	Royal Horticultural	338

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Volumes I. to XV. can be supplied unbound at 6/6, or bound in cloth, 7/6, postage extra. Cost of postage: book post, 9d. per volume; parcel post within the United Kingdom only, 5d. per single volume (series by weight).

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THE ORCHID REVIEW.

VOL. XVI.]

NOVEMBER, 1908.

[No. 191.

ORCHIDS AT WESTONBIRT.

WESTONBIRT is historic ground to the Orchidist. Over sixty years ago it contained a fine collection of Orchids, which was indeed contemporaneous with those of the illustrious James Bateman, of Knypersley, George Barker, of Birmingham, and others long since dispersed, and if little about it has been recorded, there still remain at Westonbirt a few plants which have been there for upwards of half a century. The name of "R. S. Holford, Esq., Weston Birt, Gloucestershire," appears in the list of subscribers to Bateman's big book, *The Orchidaceæ of Mexico and Guatemala*, and it was here that, in 1843, the remarkable flower-spike appeared which Lindley described as "bearing flowers of *Cynoches ventricosum* and *C. Egertonianum* intermixed," and of which the history was given last month (page 298). But it is with the modern development of the collection that we are now concerned, and having established a continuity with the past, which is certainly interesting, we may proceed.

The present owner of Westonbirt, Lt.-Col. G. L. Holford, C.I.E., C.V.O., is the son of the gentleman just mentioned, and succeeded to the estate on the death of his father in 1892, from which period we may date the modern development of a collection which is to-day one of the finest and most progressive in existence. There are twenty-one houses devoted to Orchids, all of modern construction, and with the latest improvements. The principal range is a compact block, extending from a long corridor; fifteen houses in all. They are built mostly of teak, and provided with slate staging, supported by iron framework, with sparred teak shelves on top of the staging. The uprights have a saucer-shaped base, which is filled with water to prevent insects from getting up to the plants. Water tanks are provided here and there, in which a copious supply of rain-water is stored. The arrangements for heating and ventilation are ample, and the houses are furnished with lath blinds, supported by an iron framework about twelve inches from the glass. Instead of the usual second staging, we observed that a broad shelf was placed immediately over the hot water pipes, containing a layer of moist earth, which prevents the dry heat from reaching the plants direct, and allows a better circulation of air below the

stages. The remaining six houses form a separate range of more recent construction, and will be mentioned later.

Having indicated the general conditions thus briefly, we must pass to the plants themselves, and here we may remark that a very high standard of excellence is reached, both as regards quality and culture. Colonel Holford is a great enthusiast, and in Mr. H. G. Alexander, who has charge of the collection, he has one of the most skilful growers of the day. There is a competent staff of assistants, an adequate supply of all the necessary materials, and a pure country air, free from the deleterious influence of urban fog; in short, all the essentials of successful Orchid culture are present, and the result is a condition of general excellence which it was a pleasure to see. We must now follow the order of our notes, but can only mention a few of the leading features. To describe such a collection in detail would be impossible.

The first house visited was devoted chiefly to *Odontoglossums* and *Masdevallias* of the coccinea section, with a number of *Sophronitis grandiflora*, *Lælia pumila*, and other dwarf plants suspended on two wires running throughout its length. The *Masdevallias* are clean, sturdy plants, and include most of the finest varieties. Very few were in flower at this season except two plants of the very distinct *M. × Bocking* hybrid. The *Odontoglossums* are remarkably well-grown, vigorous plants, with large, hard bulbs, and that dark green foliage which tells of perfect cultural conditions. *Osmunda* fibre with a little sphagnum is used for a compost, and the plants are started in as small pots as possible, and then shifted on as required, a method which results in the compost being kept full of healthy roots, and avoids check to the plants when repotted. A few were in bloom, and many sturdy spikes were pushing up. One *O. crispum* carried two spikes, the best with fifteen beautiful flowers. We also noted a few hybrid seedlings in healthy condition. Several plants of *Lælia pumila* were in bloom, including one good form with six flowers, also several good pans of *Sophronitis grandiflora*. A plant of the beautiful *Odontoglossum crispum* Queen-Empress was pointed out by Col. Holford as having a curious history. It is a small piece from the plant in the collection of W. Thompson, Esq., which received a First-class Certificate from the R.H.S. in March, 1901. For five or six years it made scarcely any progress, the roots dying and the bulbs being much shrivelled, but at last it started, and is now growing well and throwing up a spike.

Next we entered a house of *Vanda cœrulea*, 30 feet long by 12 broad. The plants were strong and healthy, and about a hundred spikes were pushing up. A few were in bloom, but many had been removed to the flowering house, which we shall describe presently. Col. Holford pointed out the curious habit this species has of developing its flowers after

expansion. They are small and pale when first opening, but grow steadily for three or four weeks, while the colour also develops, and what appears at first to be a poor form ultimately develops into a fine form with that bright blue tessellation which makes the species so attractive. Here were also some plants of *V. Watsoni*, pushing up several spikes, with a few *Odontoglossums*, and plants of the rare *Cœlogyne Mooreana*, one showing two spikes. This beautiful species is figured at page 329.

A *Cattleya* house followed, full of strong healthy plants, a large number being hybrid seedlings, and we noticed many in bud, with a few expanded flowers, but most of the flowering plants had been removed to the large flowering house. Every plant had a lead label clipped to the rim of the pot, on which is stamped a number, which corresponds to a numbered book in which the names, parentage and other details are kept. *Osmunda* fibre forms the staple compost, and it was remarked that Westonbirt was one of the first places in England where this compost was extensively used. It is considered superior to peat in feeding qualities, and more durable than polypodium fibre, while leaves, which give a rich food supply, perish much too quickly, and with them the roots of the plants.

Then came a house of unflowered seedling *Cypripediums* of flowering size, of which quite a third were showing for bloom, and many were already out. For these a compost of yellow loam with a little peat and moss is used. The vigour of the plants was specially marked, and many were throwing three and four, and one no fewer than six blooms at the first attempt. This was derived from *C. insigne Sanderianum* × *C. × LEEANUM* *Clinkaberryanum*, of which other plants were flowering, and we noted one fairly intermediate in shape, and the basal half of the dorsal sepal green with very small spots. Several seedlings from the same seed pod as *C. × Bianca* (*Leeanum Prospero* × *insigne Sanderæ*) are flowering, one of them promising to be finer than that certificated (p. 310). Another had many small spots on the dorsal sepal, petal and interior of the lip, with the ground colour yellow. A third had a little minute dotting on the dorsal sepal, and was inferior in shape, and a fourth had very narrow light green leaves and one bud. A seedling from *C. insigne Harefield Hall* var. × *bellatulum* had most beautiful foliage, and is producing a scape. *C. × ænanthum superbum* × *M. de Curte* had a very richly coloured dorsal sepal, but was only moderate in size and shape, while another seedling most resembled the former. *C. × Milo Westonbirt* var. × *Sallieri aureum* had a well-blotched dorsal sepal with a green ground and scarcely any white. A form of *C. × Hannibal* (*Leeanum giganteum* × *nitens*) was most like a good *Leeanum* with numerous small spots, while another from the same seed pod was quite poor. There was a very fine *C. × Hitchinsiae*, and two other seedlings with three and four buds. *C. × Cynthia* is a very pretty hybrid from *C. ×*

Sallieri Hyeatum × Charlesworthii. One sturdy seedling from C. Germinyanum × Alcibiades showed remarkable precocity, for though only sown in February, 1896, it was already producing a strong scape.

Examples of reversion were numerous, and not always confined to hybrid seedlings, for eight or nine plants out of a batch of C. insigne Chantini Lindeni × C. i. montanum aureum were in bloom, and all had green flowers with the dorsal sepal blotched. C. i. Harefield Hall var. self-fertilised had reverted to quite ordinary forms, but C. i. montanum aureum fertilised with the preceding had an enormous bud, just on the point of expansion, and should be fine. Several seedlings in bud of self-fertilized C. i. Sanderæ were pointed out, one having three buds and another an expanded flower consisting of the petals and lateral sepals only. It had also a bud which appeared to be normal. All appear true to type. We could only note a few of the very numerous seedlings in this house, where we also observed plants of *Zygopetalum* × *Roeblingianum* showing for flower, and *Zygocolax Wiganianus* in bud.

The long corridor connecting the different houses contains the evergreen and deciduous *Dendrobiums*, a batch of *Vanda teres*, exposed to full sun, *Selenipediums*, and various other interesting things. Here we noted two specimens of *S. Schlimii*, one with eleven spikes, half a dozen fine *Cattleya* × *Mantinii*, and a number of *Dendrobium formosum*, some being in flower. *Dendrobiums* are very well grown, and we noted some enormous stems of *D. nobile nobilius*, *D.* × *Ophir*, &c.

It was on entering the next house that a group of plants belonging to the old collection was pointed out, about twenty of them, most of which have been here for upwards of half a century. They included *Vanda tricolor* and *suavis*, *Aërides Veitchianum* and *Angræcum sesquipedale*, while another, a plant of *Vanda Batemanii*, was in the next house. Plants of the rare *Oncidium Jonesianum* were also pointed out, with a sturdy plant of *Brassocattleya Alexanderi*, some good *Phalænopsis*, and a magnificent specimen of *Lælio-cattleya elegans*, probably the finest in cultivation, which this year bore 247 flowers. In bloom were two good *L.-c. luminosa*, a fine lot of *Dendrobium Phalænopsis*, including the beautiful pure white variety *hololeucum*, *Sophrocattleya Chamberlainii* with three of its brilliant flowers, *Chondrorhyncha Chestertoni*, and the pretty blush-white *Selenipedium* × *Cleola*, while a good plant of *S.* × *Schræderæ candidulum*, not then in bloom, was pointed out as being like the preceding in colour. There were a dozen plants in bloom of the beautiful *Cypripedium* × *Rossetti*, all good clear yellow forms, and two had twin-flowered scapes. The leaves vary considerably, some being green, and others as much marbled as *C. callosum*. We noted also *C. purpuratum*, several *C.* × *Maudiaë*, the handsome *C.* × *Chapmanii superbum*, with various other

hybrids, and a lot of *C. insigne* in bloom. Here were some very fine batches of germinating seedlings, one of *C. villosum* × *Alcibiades superbum* coming



Fig. 41. CYMBIDIUM × EBURNEO-LOWIANUM.

up like the proverbial mustard and cress on several pots, and some were already pricked off. *C. × Loleanum Clinkaberryanum* and *C. × Sallieri*

Hyea-num have both yielded fine batches of seedlings as the result of crossing with *C. Fairrieanum*, while *C. × Niobe* Westonbirt var. crossed with both *C. × G. F. Moore* and *C. × Eurydes* have also yielded two nice batches of seedlings. This is interesting, for as a pollen parent *C. × Niobe* has proved very disappointing. But we must pass on.

Next came a *Cymbidium* house, including most of the best varieties in strong examples. Here was the noble specimen of *C. × eburneo-Lowianum*, which in 1904, when the annexed photograph was taken, bore nine racemes and an aggregate of 70 blooms, but this year, when it went to Ghent, it carried seventeen racemes and about 120 blooms. A fine plant of *C. × Winnianum* was also pointed out, which last year bore 21 spikes and 220 flowers. Here was the original plant of *C. × I'Ansoni* showing for flower, as were also the fine *C. × Holfordianum*, and a plant of *C. grandiflorum*. Last year the flowers of the latter did not open properly, and the question is whether the peculiarity is constitutional, or due to wrong culture. At all events, a piece of the Glasnevin plant, which opens normally, is being grown with it, but is not strong enough to flower yet. Here was the original *C. Parishii* var. *Sanderæ*, a fine healthy example, and a plant of *C. Lowianum* concolor bore two fine capsules as the result of crossing with the preceding. Two plants of *C. Mastersii* were in bloom, the best having three spikes. A seedling of *C. Lowianum × Tracyanum* is pushing up two spikes, and the result of this cross is awaited with much interest. The fine specimen of *Ada aurantiaca* which bore 60 racemes a few months ago was pointed out, also that of *Sophronitis grandiflora* which bore 90 flowers last year; and a good specimen of *Ornithidium Sophronitis* with a few of its brilliant flowers expanded. *Spathoglottis gracilis* was in bloom, and *Oncidium cheirophorum* and *obryzatum* were pushing spikes up. *Lycastes*, *Zygopetalums*, and other miscellaneous things were also growing here.

Passing into the next house we found what was described as the batch of seedling *Cypripedes* for next year's flowering, and we observed about 1,500 seedlings pricked off from the pans already mentioned. There were also a few seedling *Cymbidiums*, and a big batch of *Cattleya* seedlings, pricked off, with others germinating in the glass cases provided for the purpose.

We then came to the house devoted to *Lælia anceps*, of the best varieties, of which about eighty per cent. are white, and all are throwing up spikes in profusion. The one called "Bull's alba" had seven spikes. There were also examples of *L. autumnalis*, and a fine *L. alba* had four spikes. This house was a sight last year, as we know by a photograph recently sent, and there is a promise of an equally fine show this year.

The *Sobralia* house contains most of the best varieties, in fine examples, a few only being in flower. A lot of *Cœlogyne cristata* were growing well here in *Osmunda* fibre compost.

The next house contained a small batch of *Cymbidium* seedlings about two years old, about a dozen good *Cypripedium Fairrieanum*, showing variation in the amount of purple in the flower, with several good *C. × Niobe Westonbirt* var., and numerous other good things.

Then came a house devoted largely to seedling *Cattleyas* and allies including a number of *Sophronitis* hybrids, which cannot be mentioned in detail. The beautiful *Sophrölælia læta Orpetiana* has given a number of interesting seedlings.

We now come to the flowering houses, there being a small central lobby opposite to the entrance from the corridor, with a large flowering house to the left, while the corresponding house to the right is devoted to *Cypripediums*. The central lobby presented a charming sight, being devoted entirely to *Vanda cœrulea* and *Oncidium varicosum Rogersii* in bloom, the two being intermixed, and the combination of blue and bright yellow was most effective. There were eight plants of *V. cœrulea*, carrying fifteen spikes, while the *Oncidiums* were slightly more numerous.

The flowering house to the left is forty feet long, and presented a gorgeous sight, being filled throughout with fine flowering specimens of the most diverse character, *Cattleyas* and *Lælio-cattleyas*, however, predominating, and most of them were raised in the collection. *Cattleya × Fabia* was a wonderful sight, over 150 flowers being open, the plants having been selected from a large batch of seedlings, and some of the forms were exceptionally fine. *C. × Mantinii nobilior* and *C. × Mrs. J. W. Whiteley* were represented in quantity, the latter by over fifty spikes, one plant having five magnificent spikes. *C. × Hardyana* was represented by over fifty flowers, including the beautiful white varieties *alba* and *The Pearl*. *C. × Mrs. Pitt* and *C. × Lord Rothschild* were well represented, a plant of the latter having eight blooms and another a most intense orange blotch on the lip. There were several handsome *C. × fulvescens*, and of *C. Dowiana aurea* there were about a dozen flowers. We noted also a fine *C. × Maroni*, *C. × Wendlandiana*, a plant of *C. × mollis* with twelve flowers, *C. × Thayeriana*, the charming albino *C. × Dusseldorfii* var. *Undine*, *C. × Heloisix*, *C. Warscewiczii*, *C. labiata*, and others, some in several examples. The *Lælio-cattleyas* were a fine lot, and included fine examples of *luminosa*, *Berthe Fournier*, *Hildegard*, *Ophir superba*, and numerous others. *L.-c. × Ortrude* (*L. anceps × C. Dowiana aurea*) is a charming thing, with broad blush pink sepals and petals and a richly-coloured lip. *L.-c. Barbarossa* is from *L.-c. callistoglossa × C. Trianæ*, and an improvement on the former. *L.-c. Hildegard* (*C. Warscewiczii × L.-c. Decia*) is a beautiful hybrid, having lilac sepals and petals, and a richly-coloured lip, with two white blotches and some pale veining in the throat. *L.-c. Arethusa* is a very pretty hybrid from *C. Harrisoniana ×*

L.-c. *exoniensis*. Lastly, L.-c. *Lustre* is a magnificent hybrid from *C. Lueddemanniana* × L.-c. *callistoglossa*, of which several plants were in flower. With these were several plants of *Vanda Kimballiana*, two fine specimens having thirteen and fourteen spikes respectively, three good *Cymbidium erythrostylum*, one with three spikes, the best bearing twelve flowers, about thirty spikes of *Oncidium varicosum Rogersii*, *Zygocolax Wiganianus superbus*, a few *Pleiones*, *Soprocattleya Nydia*, *Soprocattleya Medeia*, a yellowish form of S.-c.-l. *Danæ*, a remarkably fine form of *Brassocattleya Mrs. J. Leemann*, B.-c. *Pluto*, B.-c. *Madame Hye*, and many others. The house was literally a blaze of colour, and the plants all select forms, and remarkably well grown.

The *Cypripedium* house to the right contained a remarkably fine series, culture and quality being alike excellent. Of *C. insigne* there were over a thousand buds and flowers in the house, including a magnificent specimen of *C. i. Harefield Hall* var.—the finest known, and all from a single growth—with thirteen scapes, one being twin-flowered, *C. i. Sanderæ* with fifteen (there were sixty scapes altogether), *C. i. Sanderianum* with eleven, &c., all the best types being represented. Of *C. Fairrieanum* there were specimens with six and seven flowers, of excellent quality. There were also *C. × Arthurianum* with twelve flowers, *C. × Germaine Opoix*, and its variety *King Edward*, two very beautiful forms, the handsome *C. × Captain Holford* (*hirsutissimum* × *superbiens*), a good well-spotted *C. × Cythera*, the richly-coloured *C. × Milo*, *Westonbirt* var., some very richly-coloured *C. × Dante* (× *Euryades* × *Charlesworthii*), showing much variation, the large and well-spotted *C. × Hannibal*, *C. × Niobe Westonbirt* var., with three flowers, the beautiful *C. × Rossetti*, with clear yellow flowers and handsomely marbled leaves, and a form of *C. × Bianca* with three light yellow flowers, and the dorsal sepal white, except a small area at the base, on which were a few minute purple dots. This was the first of the batch to flower. There was also a very richly-coloured form of *C. × Richmanii* with two scapes, one of them twin-flowered, and as this has been crossed with *C. Fairrieanum*, some very handsome hybrids should result. These are only a few out of a remarkable series of plants in flower, including many well-known choice varieties which we must pass over. But we may mention a good lot of *C. × Lecanum* varieties, including plants with two and three dozen scapes.

Our notes have extended to such a length that it will be better to defer an account of the new range mentioned, which embodies several interesting features, until next month, when there are several additional matters which we hope to touch upon. Meantime we must congratulate Col. Holford, and his able grower, Mr. Alexander, upon the excellent condition of the collection generally.

CÆLOGYNE MOOREANA.

THE annexed figure represents a plant of the beautiful *Cælogyne Mooreana* from the collection of Lt.-Col. G. L. Holford, Westonbirt, Tetbury, and is reproduced from a photograph kindly sent by Mr. Alexander. It is, of course, much reduced in size. The species is a native of Annam, and was discovered by Micholitz, when collecting for Messrs. Sander, on the Laos side of the Lang Bian range, at about 4,300 feet elevation. It flowered for



Fig. 42. *CÆLOGYNE MOOREANA*.

the first time with the importers in December, 1906, and received a First-class Certificate from the R.H.S., being dedicated to Mr. F. W. Moore, A.L.S., Keeper of the Royal Botanic Gardens, Glasnevin, who also flowered it at about the same time. Individually the flowers are much like those of *C. cristata*, and in colour and the numerous yellow, hair-like filaments on the lip, the resemblance is remarkably close, but they are rather smaller in

size, and the habit is much nearer to *C. Sanderiana*, as will be seen from the figure. The leaves, however, are narrower, and the details of the flower quite different. It was briefly described at page 23 of our fifteenth volume, and fully in the *Kew Bulletin* for 1907, p. 127. It proves to be a free grower, and is a very handsome addition to the genus. The appearance of *C. Mooreana* helps to bridge over the gap which has hitherto separated *C. cristata* from the rest of the genus, for the latter was previously somewhat isolated, and it is rather curious that a species should now appear with such a very different habit, and yet so closely similar in the appendages of the lip.

CALENDAR OF OPERATIONS FOR NOVEMBER.

By W. J. MORGAN, Rann Lea Gardens, Rainhill, Lancs.

THE next few months will bring a wealth of flowers where the plants have been properly attended to, and during the dull months will well repay any extra trouble that has been taken during the growing season.

CYPRIPEDIUMS will all give a good return, and are one of the most satisfactory classes to grow, as not only is there a great variety to choose from, but they last longer than any other section in perfection, in fact, some of them are not at their best unless they are left to develop for a month or six weeks. Fog does not affect the flowers or bulbs as it does the more delicate class of Orchids. The flowers should be neatly staked and stood to face the sun, then they will not curl back as many varieties do when left with their back to the light. The plants should be carefully watered, and none of them should be allowed to get bone dry when they are pushing up their spikes, or they will throw small flowers, and thrip will soon make its appearance, and when once these make headway it takes two or three years to get rid of the disfigured leaves, which are unsightly and a constant reminder of carelessness on the grower's part. If the houses are fumigated each fortnight or so it will keep the plants clean, and if done at night helps to get rid of cockroaches as well. Plants in flower should be staged by themselves, and the rest should be syringed on fine days, and dull days too if the temperatures are kept right. Houses should be damped at least twice daily, and a little air given whenever possible.

In using insecticides for sponging or spraying, the best should be used, and well-known brands. In experimenting with new insecticides they should be tried on a few plants which are of no value, and used below strength until one has a perfect knowledge of their strength. Generally speaking, cheap brands do not come up to expectations and are dearer in the end.

CATTLEYS and LÆLIAS of the autumn-flowering section will now be making a good display, and the house where they are put whilst in flower

should be kept fairly dry, or the flowers soon spot, which spoils their appearance. Keep them up near the glass when they are in bud, then the flowers will be stronger and of a better colour, as well as lasting much longer. Plants that have finished their growth will not need much water for some time. They should not be allowed to shrivel, but be given a rest, and during the resting season the plants should be frequently looked over, as scale nearly always makes its appearance as soon as the plants are kept a little drier. They should be carefully sponged with soft soap and warm water, or insecticide if preferred, although insecticides as a rule are very objectionable to the user, especially when used in a close warm house, often causing sickness when used for any length of time. We find it much the better plan to spray the day before we are ready to sponge them, and then sponge with soap and water. The scale certainly comes off more easily. Any plants that are sickly should be placed in a corner of the stove, where they will soon pick up again. The plants should be carefully top-dressed periodically. It all takes time, of course, but still the plants will improve more quickly, and one has the satisfaction of seeing them growing instead of hanging about. If the temperature is kept at 65° the houses will generally need damping twice daily, and air put on for a short time each day will keep the house from becoming stagnant.

ONCIDIUMS, as they pass out of flower, should be kept drier until they commence to make new growths. A temperature of 55° to 60° will suit nearly all the varieties. These, like Cattleyas, are subject to scale, and should be sponged occasionally to keep the leaves clean.

DENDROBIUMS will practically all be resting now, and care must be taken not to let the bulbs shrivel, or small flowers will be the result. Keep them as near the glass as possible with safety, and 55° should be the lowest temperature for them. *D. aureum*, *D. × Curtisii*, and a few of the early ones will be showing their buds, and should be taken into a slightly moister atmosphere to assist them to develop properly. Do not try to force them, or the buds will fall off.

SOPHRONITIS GRANDIFLORA will soon be in full flower, and this brilliant little Orchid is well worth a place in every collection, as its colour brightens up a group when striking colours are scarce. They should not be allowed to get dry, or shaded by other plants while they are growing. Generally they do best suspended from the roof of the Cool house in summer and the Cattleya house in winter. A pretty companion for it is *Odontoglossum Rossii*. The two are very pretty for table decoration, and both last a long time in flower. *O. Rossii* needs much the same treatment as the *Sophronitis*.

MANY of the smaller flowered Orchids are well worth growing, and where several Orchid or plant houses are available they are not troublesome subjects to grow. Many are botanical curiosities, but still they are very

interesting, and their curious shapes and mixture of colours are wonderful. They seem to be getting more popular, as lately I have noticed a great variety of them shown at the Orchid meetings.

CALANTHES.—As these pass out of flower they should be placed in a light and dry position. If room is scarce they can be shaken out of their pots, and after the soil is removed placed in boxes with a little sand, to keep the roots from drying too quickly. The old spikes should be removed, and the bulbs carefully looked over, and any scale that may be on them sponged off. Be careful to store in a place where there is no danger of drip, or the bulbs will soon spot, and when once spot starts in them it is almost incurable, and if the bulbs are kept always shows afterwards in the young growths.

LÆLIA ANCEPS AND AUTUMNALIS will soon be past flowering, and should be top-dressed as soon as they push new roots, which they will do as soon as they have finished blooming. Many growers object to top-dressing in the winter, but I find it is much better to top-dress or pot any Lælia or Cattleya which needs it as soon as it pushes new roots, as the sooner it is done the less roots one breaks, and if left to grow at random they soon get over the sides instead of inside the pot, and many are lost and get broken in re-staging and moving plants about for cleaning purposes. Osmunda fibre and very little moss suits them well. Be careful not to overwater them until they get established again, but syringe between the pots when the latter are dry, and overhead on fine days, which will keep them going for some time.

SEEDLINGS must be carefully watched now that more fire heat has to be used. They should not be allowed to get dry, and should be fumigated occasionally to keep them clean. Place them up close to the glass, and keep the latter clean inside and out, so as to give them as much light as possible. Do not attempt to rest seedlings, but keep them going until they get to flowering size. Keep plenty of moisture in the house or pit, and keep the temperature as even as possible. Moisture and temperature are the principal things to attend to during the winter months, and for the next month or two the sun is of no value to run up temperatures during the day, so this must be allowed for in firing.

The temperatures for next month should range about as follows:—

Stove house, 70° by day, 65° by night.

Cattleya house, 65° by day, 60° by night.

Intermediate house, 60° by day, 55° by night.

Cool house, 55° by day, 50° by night.

Damp the houses whenever they get dry, and be careful with the watering can. Moisture in the air is much better than sodden pots, and a little additional care at this season will be repaid later on.

ORCHIDS AT WESTON-SUPER-MARE.

THE old-established collection of W. M. Appleton, Esq., Hill-road, Weston-super-Mare, is, we regret to learn, shortly to be dispersed, and as we have just had the pleasure of seeing it a few notes may be interesting, especially as many fine things were found in bloom. In looking round, in company with Mr. Brooks, Mr. Appleton's able gardener, we were much struck with the number of *Cattleya* × *Appletoni* and *Cypripedium* × *Sir Redvers Buller* in bloom. Both were raised in the collection, and it was interesting to see the range of variation they presented. *Cattleya* × *Appletoni* was derived from the rare *C. elongata* crossed with the pollen of *C. Dowiana aurea*, and was described at page 350 of our thirteenth volume. Over a dozen plants were in bloom, and in every case the characters of the seed parent predominated. The habit, the elongated scape—in one case quite two feet long—the shape and colour of the flower all recalled that parent. The flowers, however, are much enlarged, and the sepals and petals more incurved and less undulate, their colour being bronzy purple, while the lip is strongly three-lobed, broad in front, and bright crimson-purple. In one case the isthmus of the lip was entirely buff yellow, but the veining of *C. Dowiana* was practically lost. One scape bore eight flowers. It is a free-growing and very effective hybrid. *Cypripedium* × *Sir Redvers Buller* was derived from *C. × Smithii* and *C. insigne*, and received a First-class Certificate from the R.H.S. in January, 1900. The combination of *C. insigne*, *ciliolare* and *Lawrenceanum* has produced a sturdy, free-flowering and handsome hybrid, with a broad, much spotted dorsal sepal, without any tendency to reflex, and well-spotted petals, altogether a very attractive flower. A score or more plants were in bloom, varying chiefly in size and the amount of spotting, and one was pointed out as superior to that certificated.

The foregoing were not all together, and some others were duplicated in the different houses, but apart from this we have followed pretty closely the order of our notes. In the first house visited, besides examples of those just mentioned, we noted the fine *Lælio-cattleya Ingramii superba* which received an Award of Merit from the R.H.S. last year, some good *L.-c. bletchleyensis*, from a batch raised in the collection, a well-flowered *Lælia Perrinii*, the rare *Barkeria melanocaulon*, examples of *Epidendrum ciliare*, a number of *Cypripedium Fairrieanum*, *C. purpuratum*, two good *C. Charlesworthii*, Keeling's var., with much white marbling on the dorsal sepal, a light-coloured form of *C. × Rolfei*, *C. × Julia* (*exul* × *Lawrenceanum*), also a cross between it and *C. bellatulum* in bud, good examples of *C. × Thyades* (*superbiens* × *Chamberlainianum*), and two pretty hybrids derived from *C. Chamberlainianum*, crossed with *C. niveum* and *C. Godefroyæ leucochilum* respectively, with a few others.

The next house contained some good *Cattleya labiata* in bloom, with a lot of *Lælia anceps* suspended from the roof, and throwing up sturdy spikes. There were also several examples of *Lælio-cattleya Remula*, from a batch raised in the collection and varying considerably in colour, some having the sepals and petals bronzy purple and others greenish, a sturdy plant of *Cypripedium insigne* Harefield Hall var., bearing five buds and a capsule, *C. beechense*, and other good things.

A third house contained a good batch of *Dendrobium Phalænopsis* in flower, these having been in the collection about twelve years. They showed much variation in colour, and included a bright rosy variety which has received an Award of Merit from the R.H.S. We noted also *Oncidium Papilio* in bloom, several good *Cypripedium Charlesworthii*, *C. × Transvaal*, *C. × selligerum*, *C. insigne* varieties *Ernestii* and *Dorothy*, *Brassia brachiata* with two spikes, two plants of *Zygopetalum maxillare* with three spikes each, and a curious little *Dichæa* species, which is seldom out of bloom, and whose identity is uncertain.

In the next division of the range we noted a fine example of *Cypripedium × bingleyense* bearing two twin-flowered scapes, half a dozen *C. Spicerianum* in bloom, a good *C. × Charlesianum*, varieties of *C. insigne*, *Epidendrum osmanthum*, *E. floribundum* with two fine panicles, *Cattleya Harrisoniana*, *Lælio-cattleya intermedio-flava* in spike, and that charming little gem, *Pleurothallis astrophora*, with several racemes of flowers.

Coming to a longer detached house we found a plant of *Dendrobium superbiens* bearing three fine spikes, examples of *Cœlogyne fimbriata* and *fuliginosa* in bloom, *Epidendrum × O'Brienianum*, a good *Lælia Dayana* with three flowers, *Cattleya Aclandiae*, the handsome *Cypripedium × Stottianum*, in which the characters of *C. × œnanthum* and *C. Charlesworthii* are blended, and the dorsal sepal is handsomely marbled, the pretty *C. × Daphne*, *C. × longwoodense* (*× LEEANUM × Charlesworthii*), *C. × Arthurianum*, a good *C. × Hitchinsiae*, *C. × miniatum* (*Curtisii × insigne*), with five blooms, &c.

Another long house contained examples of *Cattleya × rubescens*, a pretty hybrid between *C. labiata* and *dolosa*, *Phalænopsis Esmeralda*, *Lælia crispilabia*, *Brassocattleya Digbyano-Mendelii*, *Oncidium Harrisonianum*, *O. ornithorhynchum* in bud, *Dendrobium × Galatea*, *Cypripedium insigne Sanderæ*, *C. × gigas*, with various other hybrids. A few have arisen as stray seedlings, and in some cases the parentage is uncertain. One curious cross between the two varieties of *C. insigne*, *Dorothy* and *Sanderæ*, has reverted to a light green form of the type with much brown spotting on the dorsal sepal, and is noted in more detail on page 336.

Another house contained a fine *Cattleya × Mantinii* with an eight-flowered spike, a good *C. × Pittiana*, *Phalænopsis amabilis*, *Odontoglossum*

grande, *Oncidium tigrinum*, a fine plant of *Maxillaria picta* which was quite a mass of flowers, *Cypripedium* × *œnanthum*, a good hybrid between *C. Rothschildianum* and *villosum*, having yellow flowers striped with brown, and many others.

In an *Odontoglossum* house not much was seen in flower, except a plant of *O. crispum*, though several spikes were pushing up, and a plant of the pretty *Restrepia elegans* bore a number of flowers.

As is well known, Mr. Appleton has paid much attention to hybridising, and a good many hybrids have been raised in the collection, but we have only been able to note the best of those seen in flower. A few of the plants may appear out of place, which chiefly arises from displacement in preparing for the sale. We regret the dispersal of this very interesting collection, and hope that Mr. Brooks, who has managed it with great success for a good many years, will soon meet with another suitable engagement.

A small collection of Orchids is grown by Mr. W. Brooks, F.R.H.S., Whitecross Nurseries, Weston-super-Mare, partly for cut blooms and partly as an interesting hobby, and here we saw a few interesting things in bloom, including a good *Cœlogyne Massangeana*, with three spikes, two plants of *Cypripedium Fairrieanum*, *C. glaucophyllum*, *C. Chamberlainianum*, *C. concolor*, *C. × tonso-insigne*, the pretty *C. × Thornianum* (× *nitens Sallieri* × *Charlesworthii*), *C. × Hitchinsiae*, various forms of *C. insigne*, and plants of the curious reversion from *C. insigne* *Dorothy* × *C. insigne Sanderæ* mentioned on the preceding page.

In another house were several *Cattleya labiata* in bloom, one having a very deep purple front lobe to the lip, examples of *C. Harrisoniana*, *Dendrobium Phalænopsis* and *bigibbum*, with some good *Lælia pumila*, a plant of *Oncidium bicallosum* throwing up two scapes, and a few others.

Another house contained a varied collection of *Dendrobiums* whose growths were about finished, some of the stems of *D. Wardianum* being well developed and promising a good display of bloom in the spring. There were also plants of *Cœlogyne cristata*. We saw also a small batch of imported Brazilian *Cattleyas*, apparently *C. Harrisoniana* and allies.

CATASETUM FIMBRIATUM.

I WAS interested in the article on *Catasetum fimbriatum* at page 283, as I sent a flower of this Orchid to you this summer for you to name, and it was from a plant I collected myself in 1907 whilst travelling in South America. As there has been some doubt as to its correct habitat, it may be of interest to hear of my experience in finding my plant, which I value, not for its horticultural beauty, but from the fact that I was on my way to the great and little heard of waterfall of the Iguazu, which is a tributary of the

Parana, and about 1,000 miles from its mouth, the falls being in every way larger than Niagara, and incomparably more beautiful. I left early in the morning the little wooden house, twelve miles from the Falls, where I had spent the night. It was in the month of May; the cold wet mist was still very thick (very much as it has been here this 1st of October, only colder), everything being dripping wet in the forest, and it was not till between seven and eight that the sun had cleared it away, and then at mid-day it was as hot as our early summer. As we went along I enquired from our guide, through a friend, who was a good Spanish scholar, if there were any Orchids in the forest, and he said there were, and of one, the "Casaca Romana" (Roman coat), he could show me where a plant grew, so on my way back we halted, and there was the plant I now have growing on a dead tree. It did not take long to gather it, and, as I have told you, it flowered this year. Had I known it to be of any interest, I would have taken more especial notice when it was in flower. One thing that struck me was the way the pollen mass was shot forward when the lip was touched; but I must say, from my remembrance of the flower, I should not have thought the description in your article answered to mine. Doubtless this plant is distributed in the dense forests of Brazil, Argentina (State of Missunes), and Paraguay, north of Lat. 26°. My plant came from 25½ N., 54½ W.

Pippbrook, Dorking.

H. GURNEY AGGS.

INHERITANCE OF ALBINISM IN ORCHIDS.

Two more interesting cases of reversion arising from the crossing of albinos can be added to those already recorded (pp. 228, 265).

Two coloured flowers of *Cattleya labiata* have been sent from the collection of R. G. Thwaites, Esq., of Streatham, and Mr. Black remarks that they are from a batch obtained by intercrossing two varieties having white sepals and petals, namely, C. l. *Amesiana* and R. I. *Measures'* var. He adds: "We have now flowered a considerable number, and have a good many in bud, and all seem to be coloured. We showed two of them at the R.H.S. meeting yesterday."

The other case is that of *Cypripedium insigne* Dorothy × C. i. *Sanderæ* mentioned on page 334. Mr. Appleton raised a cross between these two yellow varieties, and all reverted to quite ordinary forms, having green ground colour, with more or less spotting on the dorsal sepal. All that we saw had rather small spots, and in several cases less numerous than usual.

Both the crosses mentioned were made in the hope of obtaining albino varieties, and we know that many others have been made with the same object. The result illustrates the benefits of cross-fertilisation in much too graphic a fashion, and raisers will probably be driven to try self-fertilisation more frequently in the future.

R. A. R.

CATTLEYA BOWRINGIANA.

THIS distinct and floriferous species was introduced by Messrs. James Veitch & Sons nearly a quarter of a century ago, when autumn-flowering Cattleyas were not numerous—for the fine old *C. labiata* had not then been re-discovered. As it proved to have a vigorous constitution it at once leapt into favour, though to-day it is rather eclipsed by its own hybrids, which now form a very numerous series. The accompanying figure represents a remarkably fine inflorescence, bearing as many as forty-seven flowers, which was grown at North Easton, Mass., U.S.A., by Mr. William N. Craig, and



Fig. 43. *CATTLEYA BOWRINGIANA.*

which we believe has never been surpassed. The plant which bore it was grown in *Osmunda* fibre, in a fifteen inch pan, and when actively growing was watered occasionally with liquid manure. *C. Bowringiana* is a native of British Honduras, and is said to be found on the cliffs by the side of a rapid stream, growing over a succession of waterfalls, and where the atmosphere is always highly charged with moisture, owing to the rapid evaporation from the stream during the dry season, and the excessive rainfall at other times of the year.

SOCIETIES.

ROYAL HORTICULTURAL.

A MEETING of this Society was held at the Royal Horticultural Hall, Vincent Square, Westminster, on October 13th, when there was a very fine display of Orchids, and the awards consisted of eleven medals, two First-class Certificates, three Awards of Merit, two Botanical Certificates, and two Cultural Commendations.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. Day), staged a fine group, to which a Silver Flora Medal was given. It contained a number of good *Odontoglossums*, including a beautifully grown and flowered specimen of *O. × Rolfeæ*, and a fine blotched form of *O. crispum*, flowering for the first time, a good example of *Brassocattleya Digbyano-Warneri*, three strong plants of *Cypripedium insigne* Harefield Hall var., some good forms of *Cattleya × Iris*, and various other interesting things. A First-Class Certificate was given to *Lælio-cattleya St. Gothard* (*L.-c. Gottoiana × C. Hardyana*), a remarkably fine hybrid, having broad, purple-rose sepals and petals, and a very large ruby purple lip.

H. Little, Esq., Baronshalt, Twickenham (gr. Mr. Howard), also received a Silver Flora Medal for a fine group of *Cattleya Bowringiana* hybrids, including a magnificent example of *C. × Mantinii* with five spikes of over thirty blooms, *C. × Wendlandiana*, *C. × Mrs. J. W. Whiteley*, *C. × Portia*, *Læliocattleya Tenos* and others.

H. J. Bromilow, Esq., Rann Lea, Rainhill, Lancs. (gr. Mr. Morgan), received a First-class Certificate for *Cypripedium Charlesworthii* Bromilowianum, a very beautiful albino, having the dorsal sepal pure white with a small green marking at the base, the petals and lip pale green, without any trace of the usual brown markings, and the staminode porcelain white.

Lt.-Col. G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), sent *Sophrocattlælia Danæ aurea*, a very pretty variety having yellowish sepals and petals tinged with rose, and a purple apex to the bright yellow lip, *Brassocattleya heatonensis delicata*, a very light-coloured variety, and *Lælio-cattleya Cornelia* Westonbirt var. (*L. pumila × C. labiata*), a large and beautiful form, having rose-coloured sepals and petals, and the lip rich amethyst with a paler margin, the latter gaining an Award of Merit.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan), sent *Lælio-cattleya Dorothy Strachan* (*L. Dayana × C. Eldorado*), a dwarf and pretty hybrid, having pale lilac flowers, with some purple markings on the margin of the petals, and the lip purple.

Messrs. Sander & Sons, St. Albans, staged a very fine group, which received a Silver Flora Medal. At the back were some noble examples of

Vanda coerulea of the finest type, with a brilliant series of *Cattleyas* and *Læliocattleyas* in front, these including *C. × Lord Rothschild* *magnifica*, *C. × conspicua* (*Gaskelliana × bicolor*), approaching *C. × Iris* in shape, and *C. × Venus Sander's* var. There were also *Cypripedium × Actæus auriferum*, *C. × Niobe Excelsior* with several flowers, and various other good things. An Award of Merit was given to *Cypripedium × Lord Ossulton Sander's* var. (*× LEEANUM CLINKABERRYANUM × CHARLESWORTHII*), a fine variety, having a white dorsal sepal, slightly tinged with rose, and a small green base, and the rest of the flower light green. A similar award went to *Odontoglossum Pescatorei Sanderæ*, a remarkable and distinct variety, having broad white sepals and petals, with light brown spotting on the lower half, and the lip white, with some purple lines at the base of the yellow crest. Botanical Certificates were given to *Cymbidium Dayanum*, Rchb. f., whose history was given at page 356 of our fifth volume, and which has since been sent from Annam by Micholitz, and to *Megaclinium colubrinum*, Rchb. f., having both the flowers and rachis dull purple in colour.

Messrs. Charlesworth & Co., Haywards Heath, Sussex, received a Silver Flora Medal for a choice group, including some richly-coloured forms of *Lælio-cattleya luminosa*, L.-c. *Golden Oriole*, and others, *Zygocolax Wiganianus*, some good *Vanda Kimballiana*, *Odontoglossum × Lambeauianum*, and other *Odontoglossums*, *Trichopilia nobilis*, *Phaius flavus albus*, an ivory white form with brown veining on the lip, *Oncidium incurvum album*, a fine *Cymbidium × Gammieanum*, the rare *Chondrorhyncha Lendyana*, *Miltonias*, and a good example of the dark purple *Cynoches Egertonianum*, which was figured in our last issue (pp. 296, 297).

Messrs. James Cypher and Sons, Cheltenham, also received a Silver Flora Medal for a fine group, containing a good series of *Dendrobium Phalænopsis*, some excellent *Cattleya × Mantinii nobilior*, the deep yellow *Phaiocymbidium chardwarensense*, with red-brown stripes on the lip, a number of *Cypripedium Fairrieianum*, *C. × Milo Westonbirt* var., and other interesting things.

Messrs. J. and A. A. McBean, Cooksbridge, received a Silver Banksian Medal for a choice group, containing a fine series of *Odontoglossum crispum*, *O. × Lambeauianum*, and others. Several good plants of *Cypripedium insigne Sanderæ*, with five to seven flowers, *C. × Maudiae*, the handsome *C. × Rossetti*, *C. × memoria-Mœnsiæ*, and others. Cultural Commendations were given to magnificent specimens of *Cattleya × fulvescens* with fourteen blooms, and to *C. Bowringiana* with nine strong heads of flowers.

Messrs. Hugh Low & Co., Enfield, received a Silver Banksian Medal for a good group, including two plants of *Lælia Perrinii nivea*, a white form

with the front of the lip pale pink, *Cymbidium erythrostylum*, *Oncidium incurvum album*, *O. longipes*, *Vanda Kimballiana*, a good *Cattleya Gaskelliana alba*, *Miltonia vexillaria Leopoldi*, *Cycnoches peruvianum*, *Cypripedium* × *Thalia giganteum*, *C.* × *Milo Westonbirt* var., *C.* × *A. de Lairese Low's* var., and others.

M. Mertens, Mont. St. Amand, Ghent, received a Silver Banksian Medal for a good group, consisting mostly of hybrid *Odontoglossums*, with a well-coloured seedling *O. crispum*, and a good *Miltonia* × *Bleuana*.

Messrs. J. W. Moore, Ltd., Rawdon, Leeds, received a Silver Banksian Medal for a very pretty group, including good examples of *Cattleya* × *Iris* and *C.* × *Armstrongiæ*, *C.* × *Venetia*, a pretty hybrid of *C. maxima* having blush white flowers veined with purple on the lip, a finely-coloured hybrid between *C.* × *Iris* and *Lælio-cattleya Cappei*, having orange-coloured sepals and petals, and a ruby-coloured lip with a yellow line down the centre, *Cypripedium insigne Harefield Hall* var., a dark form of *C. Fairrieanum*, *C.* × *Miss Louisa Fowler*, and other good forms.

Messrs. Stanley & Co., Southgate, also received a Silver Banksian Medal for a good group, including *Cattleya labiata* varieties and *C.* × *Minucia*, with a few interesting botanical Orchids.

Messrs. Heath & Son, Cheltenham, sent a small group of *Cypripediums* with *Dendrobium formosum giganteum* and *D. Phalænopsis*.

Miss M. Walters Anson, Dovedale, Lewin-road, Streatham, submitted a number of paintings of Orchids, which were considered very faithful portraits, and the Committee recommended the award of a Silver Flora Medal.

THE Report of the Scientific Committee of this date contains the following:—

NOMENCLATURE OF ORCHID HYBRIDS.—The following resolution was received from the Orchid Committee: "That the Scientific Committee be asked to consider and advise upon the proper nomenclature of tri-generic, quadri-generic, and other hybrids, as it appears to the Orchid Committee that not more than two generic names can conveniently be combined in defining the origin of the hybrids." Several letters upon the subject were considered, and suggestions were made as to the best methods of forming names for these hybrids. It was finally proposed by Mr. Veitch, and seconded by Mr. Hurst, that a sub-committee should be formed to consist of five members of the Scientific Committee and five of the Orchid Committee, who should confer together and further consider the subject. This was carried, and Dr. Rendle, Messrs. Bowles, Fawcett, Hurst and Rolfe were appointed to represent the Scientific Committee.

Lt.-Col. G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), staged a magnificent group, which filled the large stage, some forty feet long, immediately to the left of the entrance, and to which the Society's Gold Medal was awarded. The group was most effectively arranged, and was remarkable alike for the quality of the exhibits and their high culture. It contained a most brilliant series of Cattleyas, Læliocattleyas, and Cypripediums, with numerous other good things, most of which are mentioned in the article with which the present number commences, and therefore need not be repeated. It was admittedly the best of the five groups from Westonbirt which have gained Gold Medals this year, and was a centre of attraction throughout the afternoon. Orchid culture of this kind is apt to be infectious. Awards of Merit were given to Brassocattleya Madame Hye superba (C. Harrisoniana $\times$ B. Digbyana), a very fine rosy-lilac form, to Læliocattleya Ortrude superba (L. anceps $\times$ C. Dowiana aurea), a beautiful hybrid having the sepals and petals blush pink, and the lip purple crimson with some yellow lines at the base, and to L.-c. Lustre gigantea (C. Lueddemanniana $\times$ L.-c. callistoglossa), a large and handsome hybrid having the sepals and petals freckled with light rose on a white ground, the latter being broad, decurved and undulate, while the ample lip was claret-purple, becoming lighter in front, with some yellow veining in the throat. An interesting novelty was seen in Brassocattleya $\times$ Dante (C. Grossii $\times$ B. Digbyana), most like the Cattleya parent in shape, and having greenish sepals and petals, and a purple, somewhat recurved and fringed lip, with a broad yellow stripe on the isthmus.

C. R. Ashton, Esq., Broadlands, Camden Park, Tunbridge Wells (gr. Mr. A. Young), staged a very fine group, about twenty feet long, to which a Silver Flora Medal was given. It contained some fine specimens of *Cattleya labiata* and *C. Bowringiana*, one of the former bearing nine racemes, a fine *C. × Mrs. Pitt*, *C. × Mantinii*, *C. × Iris*, *C. × fulvescens*, *C. × Dowiana aurea*, *Lælia præstans*, *Lælio-cattleya blechleyensis*, *L.-c. eximia*, *Broadlands* var., *Dendrobium Phalænopsis*, *Odontoglossum grande*, *O. crispum*, *Miltonia candida*, *Oncidium varicosum*, *Sophronitis grandiflora*, &c. The plants showed excellent culture, and the specimen *Cattleyas* are said to have been grown on from small pieces.

[illegible]

good *Miltonia* × *Bleuana*, *M. vexillaria*, the chaste *Lycaste Skinneri* alba, *Odontoglossum grande*, and the pretty yellow *O. g. Pittianum*, the brightly coloured *Cypripedium* × *Annie Goodson*, *C. Argus*, *C. × Charlesianum*, and other good things.

John S. Moss, Esq., Wintershill Hall, Bishops Waltham (gr. Mr. Kench), sent a small group of well-grown *Cattleya Dowiana aurea*, which received a Silver Banksian Medal. The group also included *Lælio-cattleya* Mrs. Hood (*L. × Iona × C. Dowiana aurea*), a fine rose-purple flower with a much darker lip.

Clement C. Moore, Esq., Hackensack, New Jersey, U.S.A., sent a group of cut spikes of *Cattleya labiata*, white and coloured, of excellent quality, which had stood the long journey very well. One spike bore six very fine richly-coloured flowers. A Silver Banksian Medal was awarded.

Sir Trevor Lawrence, Bart., K.C.V.O., Burford, Dorking (gr. Mr. White), sent a pretty blush-white form of *Lælia pumila* with some rose-pink markings on the lip, *Sigmatogyne Pantlingii*, a curious little plant closely allied to *Panisea*, *Masdevallia tridens*, *M. Ortgiesiana*, bearing very numerous pale yellowish flowers, and *Saccolabium dasypogon*, an ally of *S. bellinum*, but with smaller flowers, the two latter receiving Botanical Certificates.

W. Waters Butler, Esq., Southfield, Edgbaston, sent the beautiful *Cattleya × Hardyana* alba, having white sepals and petals, and the usual richly-coloured lip, and *C. labiata* Southfield var., a large and brightly coloured form.

Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. Chapman), sent *Calanthe × Angela* (× *burfordiensis × Oakwood Ruby*), a very beautiful ruby-crimson form.

Mrs. Joad, Worthing (gr. Mr. Flack), sent the brilliant *Renanthera coccinea*, bearing a large branching panicle of crimson flowers.

G. F. Moore, Esq., Chardwar, Bourton-on-the-Water (gr. Mr. Page), sent *Cypripedium × Actæus* var. *Milkmaid*, a large light-coloured form having some pale rose-coloured markings on the dorsal sepal.

H. Spicer, Esq., Aberdeen Park, Highbury (gr. Mr. Lovegrove), sent a fine group of *Cypripedium Spicerianum*, consisting of about fifty plants with over a hundred flowers, and showing a considerable amount of variation.

R. G. Thwaites, Esq., Chessington, Streatham (gr. Mr. Black), showed a pretty little group, including several good varieties of *Cattleya × Fabia*, two coloured forms of *C. labiata* obtained by crossing two white forms of the species, and thus disappointing, two good *Lælio-cattleya* *Ophir*, and *Brassolælia Cecilia* (*L. pumila × B. Digbyana*), a lilac-coloured flower of fairly intermediate shape.

A. Warburton, Esq., Vine House, Haslingden (gr. Mr. Dalgleish), sen

Cypripedium insigne excelsum, a fine form of good substance, approaching the Harefield Hall var.

Messrs. Charlesworth & Co., Haywards Heath, staged a very fine group, occupying nearly forty feet of staging, to which a Silver-gilt Flora Medal was awarded. Several handsome things were massed in quantity, the centre consisting chiefly of a fine lot of the brilliant *Lælio-cattleya luminosa*, while a number of excellent *Vanda cœrulea* and *O. Forbesii* were grouped at one end, with a fine lot of *O. varicosum* at the other. *Cattleya* × *Mantini* nobilior was also used with great effect. We noted also some good white and coloured *C. labiata*, the fine *C. × Alicia*, *Vanda Sanderiana*, *Brassocattleya Pluto*, the beautiful white *Brassocattleya Queen Alexandra*, with some coloured forms, *Cirrhopetalum ornatissimum* and *Fascinator*, the brilliant *Odontioda Charlesworthii*, *Miltonia × Bluntii Lubbersiana*, the pure white *Cœlogyne Veitchii*, with a graceful drooping raceme, *Odontoglossum crispum xanthotes Charlesworthii*, a beautiful white form with some orange-yellow markings, *O. grande aureum*, and a few other *Odontoglossums*, *Cymbidium longifolium*, *Cypripedium × Niobe*, and various other fine things. A First-class Certificate was given to *Vanda cœrulea Charlesworthii*, a large and beautiful pure white variety, without the slightest trace of lilac anywhere, and an Award of Merit was given to *Dendrobium Cœlogyne maximum*, a remarkably large form, measuring eight inches from tip to tip of the sepals, their colour being yellow, striped with purple, and with the usual dark markings on the lip.

Messrs. Hugh Low & Co., Enfield, received a Silver Flora Medal for a very beautiful group of about twenty feet long, containing a number of good coloured forms of *Cattleya labiata*, with the charming white forms *alba*, *Gilmouria*, *R. I. Measures' var.*, *reedleyensis*, and others, *C. Forbesii*, *C. Dowiana aurea*, *C. × Mrs. J. W. Whiteley*, the dark *C. Bowringiana*, *Low's var.*, *Oncidium ornithorynchum album*, *Dendrobium formosum*, *Brassolælia Digbyano-purpurata*, *Cœlogyne pandurata*, the graceful *Cycnoches peruvianum*, with a second short inflorescence of apparently female buds, *Cypripedium × Maudia*, *C. × triumphans*, *C. × Leea*, *giganteum*, and other good things.

Messrs. Gurney Wilson & Co., Haywards Heath, received an Award of Merit for *Brassocattleya Queen Alexandra*, *Glenthorne var.*, a large and beautiful white variety with a deeply fringed lip.

Messrs. Jas. Cypher & Son, Cheltenham, staged a good group, including *Cattleya × Portia gigantea*, a very large rose-purple hybrid of excellent shape, *Cypripedium × triumphans*, *C. × bingleyense*, *C. × Maudia*, *C. × Milo*, *Westonbirt var.*, and many others.

Mr. A. W. Jensen, Lindfield, Haywards Heath, sent about eight good *Cattleya Dowiana aurea*, one of them having a four-flowered spike.

M. Mertens, Mont St. Amand, Ghent, sent a few good hybrid *Odontoglossums*.

Messrs. Stanley & Co., Southgate, sent a bright little group, including several good *Cattleya labiata*, *C. Dowiana aurea*, a fine *Lælia præstans* with eight flowers, *Lælio-cattleya* Lady Rothschild, *Epidendrum ciliare*, *Oncidium Papilio*, *Cypripedium* × *Actæus*, several good *C. insigne*, &c.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

A MEETING of this Society was held at the Coal Exchange, Manchester, on October 8th, when there was a very fine display of Orchids.

Ed. Rogerson, Esq., Oakdene, Didsbury (gr. Mr. Price), staged a small but choice group. *Cypripedium* × *Memnon giganteum* received an Award of Merit, and good examples of *C. × Actæus revolutum* and *C. × nitens* var. *Prince Olaf* had their previous awards confirmed. I also noticed *Odontoglossum* × *ardentissimum* *Rogersonianum* and *O. crispum xanthoglossum* (Vote of Thanks).

Dr. Hodgkinson, Wilmslow (gr. Mr. Woore), showed *Cypripedium bellatulum* Exhims var., a very dark form, which gained a First-class Certificate.

H. J. Bromilow, Esq., Rann Lea, Rainhill (gr. Mr. Morgan), showed the unique albino *Cypripedium Charlesworthii* *Bromilowiaë* (described on page 338), which was awarded a First-class Certificate and a Silver Medal.

Mr. Wm. Bolton, Warrington, showed a small but select group, the chief plants being *Cypripedium insigne* Harefield Hall var., *C. × Maudiaë*, and *C. × Actæus magnificum*. I noted also a very effective hybrid from *C. × Leeanum* × *Baron Schröder*.

Messrs. Moore & Co., Rawdon, Leeds, staged a very nice group of mixed plants. *Bulbophyllum appendiculatum* and *B. grandiflorum* both gained Botanical Certificates, and *Cœlogyne asperata* and *Cycnoches peruvianum*, both very pretty, Awards of Merit. I noted also a well-grown plant of *Cycnoches chlorochilon*.

Mr. Shackleton, Great Horton, Bradford, showed *Cypripedium* × *Arthurianum*, *C. × Maudiaë*, *C. Fairrieanum*, a good *C. × Leeanum*, *Lælia præstans alba*, &c. (Bronze Medal).

Mr. Birchenall, Alderley Edge, showed a small group, which included some well-flowered *Odontoglossum grande*, *Cypripedium insigne* *Sanderæ*, *C. × Oberon*, *Bollea Lalindei*, &c.

Messrs. Charlesworth & Co., Haywards Heath, staged a small but very choice group. *Cattleya* × *Aliceæ* (× *Iris* × *labiata*), a flower with dark sepals and petals and a richer deeper toned lip, gained a First-class Certificate. *Lælio-cattleya* Gotthard (*L.-c.* *Gottoiana* × *C. Hardyana*), a

large and compact flower of good shape, was given an Award of Merit. I also noted *Miltonia* × *Bluntii* Keeling's var., &c., &c.

Mr. Stott, Radcliffe, showed two or three well-grown plants of *Cypripedium* × *Pollettianum*.

Messrs. Keeling & Sons, Westgate Hill, Bradford, showed *Stanhopea insignis aurea*, a nice unnamed hybrid from *Cypripedium Druryi* × *Charlesworthii*, *C. vexillarium*, *C. Fairrieanum*, and *Sophro-cattleya Nydia*, a small flower of rich deep colouring, which gained an Award of Merit.

E. Ashworth, Esq., Harefield Hall, Wilmslow (gr. Mr. Holbrook), showed *Lælia præstans* Harefield Hall var., a large flower of good colour, and *Cattleya* × *Niobe*, both of which gained Awards of Merit.

Messrs. Sander & Sons, St. Albans, staged a very effective group, in which I noted a very nice *Cattleya Gaskelliana*, with white flowers and the throat of the lip rich orange, faintly blotched with heliotrope in front, *Cypripedium* × *Hitchinsiae*, *C. × Olga* Bagshawe, and many others of good quality.

Messrs. Hugh Low & Co., Enfield, staged a very showy group, composed of many *Cattleya* × *Iris* of different tints, *C. Gaskelliana alba*, *C. × St. Gilles* (*Patrocinii* × *Dowiana aurea*), *Bulbophyllum Godseffianum*, *Lælio-cattleya bletchleyensis*, *Cypripedium* × *Juno*, *C. insigne* Harefield Hall var., &c. The group received a Silver Medal, while *Cycnoches peruvianum* gained an Award of Merit, and *Bulbophyllum barbigerum* a Botanical Certificate.

Charles Parker, Esq., Ashton-on-Ribble, showed a small group of *Cypripediums*, gaining a Bronze Medal, with Awards of Merit for *Cypripedium Charlesworthii* Fern Bank var. and *C. C. Payne's* var.

J. Williamson, Esq., Stretford, gained an Award of Merit for *Cattleya Lady Ingram*.

J. McCartney, Esq., Bolton (gr. Mr. Holmes), staged a mixed group of *Lælias* and *Cattleyas*. *Cattleya* × *Lord Rothschild*, Castle Hill var., *C. Gaskelliana Ashtoniae*, and *Lælio-cattleya præstoglossa*, with very dark flower and intense purple lip, all gained Awards of Merit, and *Phalænopsis Esmeralda* a Botanical Certificate. *Odontoglossum grande*, *Cattleya Harrisoniana*, &c., completing the group (Silver Medal).

A. Warburton, Esq., Vine House, Haslingden (gr. Mr. Dalglish), showed a nice group of *Cypripediums* of excellent quality. *C. insigne* Col. Lumsden and *C. i. Dorothy* both received Awards of Merit. Included in the group were *C. i. Sanderæ*, *C. × Maudiae*, *C. × Daisy Barclay*, *C. × triumphans* Jules Hye's var., *C. Fairrieanum*, &c. (Silver Medal).

At the meeting held on October 22nd the stages were well filled with exhibits of good quality. The Committee were present as follows: Messrs.

E. Ashworth (Chairman), Rd. Ashworth, Thorp, Ward, Sander, Cowan, Shill, Keeling, Warburton, Duckworth, Holmes, Cypher, Ashton, Parker, and Weathers (Sec.).

Mrs. Mary Gratrix, West Point, Whalley Range, showed *Cypripedium insigne Bohnhofianum* in good form.

Messrs. Cypher, Cheltenham, staged a bright and interesting group, which gained the Society's Silver-gilt Medal. At one end were about fifty plants of *Cypripedium Fairrieanum*, several being of good form and well marked, and at the other end several good *Cypripediums* of the best varieties balanced the group. I noted *C. × triumphans*, *C. × Tityus*, *C. × Niobe superbum*, *C. insigne Sanderæ*, &c. In the centre stood two or three *Cattleya × Fabia*, *C. × Mantinii*, *Lælia × juvenilis*, *Phaiocymbidium chardwarensense*, and several well-flowered plants of *Dendrobium Phalænopsis*, &c.

Mr. W. Bolton, Warrington, showed a small but select group of *Cypripediums*, the chief of which were *C. × triumphans*, *C. × Baron Schröder*, *C. × Arthurianum pulchellum*, *C. × Alcibiades superbum*, *C. insigne Chantini Lindeni*, *C. × LEEANUM Corona*, &c.

J. Williamson, Esq., Stretford, staged a nice mixed group, which gained a Silver Medal. *Cattleya × Wendlandiana* Williamson's var. gained an Award of Merit. I noted a well-flowered *C. × John Baguley*, *C. labiata* Williamson's var., *Lælio-cattleya elegans*, *Cypripedium insigne Sanderæ*, and other well-flowered *Lælias* and *Cattleyas*.

Ed. Rogerson, Esq., Oakdene, Didsbury (gr. Mr. Price), showed *Cypripedium × Hitchinsiae* var. *Padgeni*.

R. Ashworth, Esq., Ashlands, Newchurch (gr. Mr. Fletcher), staged a choice group of good things. A well-flowered plant of *Odontoglossum Lambeauianum* var. *Richard Ashworth* gained an Award of Merit. There were several good spikes of *O. crispum* of good shape, *O. × Fowlerianum* (*Rossii × cirrhosum*), *Cypripedium × Phœbe*, *C. Godefroyæ leucochilum*, *Cattleya × Mantinii*, *C. Dowiana aurea*, &c. (Silver Medal).

J. McCartney, Esq., Hey House, Bolton (gr. Mr. Holmes), staged a group of *Cattleyas* and *Lælias* principally, including *C. labiata* of many varieties, *C. Harrisoniana*, *L. præstans*, &c. (Bronze Medal).

H. Arthur, Esq., Blackburn, showed a curiosity in *Oncidium Lucasianum*, which had thrown out a growth from the top of an old flower spike, had completed three bulbs, and was flowering from these aerial growths.

Chas. Parker, Esq., Ashton-on-Ribble, Preston, staged a small group of *Cypripediums*, the chief of which were *C. × triumphans*, good types of *C. Charlesworthii*, *C. × Mahleræ*, *C. Fairrieanum*, &c. (Bronze Medal).

J. H. Craven, Esq., The Beeches, Keighley (gr. Mr. Corney), showed *Cypripedium × fulshawense*, *C. × Adrien Lefebvre*, &c.

Ziba A. Ward, Esq., Cringlewood, Northenden (gr. Mr. Weatherby),

staged a good group of *Cypripediums*, composed chiefly of *C. insigne* *Sanderæ* and other yellow varieties, as : *C. i. Laura Kimball*, *C. i. Chantini Lindeni*, *C. i. Peetersii*, a good plant of *C. i. Perfection*, *C. × nitens*, &c. (Silver Medal).

Mr. Shackleton, Great Horton, Bradford, showed *Odontoglossum grande*, *Cypripedium Charlesworthii*, &c.

Mr. Birchenall, Alderley Edge, staged *Cypripedium × radians*, *Odontoglossum grande*, &c.

H. J. Bromilow, Esq., Rann Lea, Rainhill (gr. Mr. Morgan), staged a very choice group of *Cypripediums*. *C. insigne rotundum*, *C. Fairrieanum* var. *Stonei*, and *C. × Actæus* var. *rubens* all received Awards of Merit. I noted also *C. × Leander Rann Lea* var., *C. insigne Chantini Lindeni*, *C. i. Bohnhofianum*, *C. × Maudiaë*, *C. × Thalia giganteum*, *C. × Hitchinsiaë giganteum*, &c. (Silver Medal).

A. Warburton, Esq., Vine House, Haslingden (gr. Mr. Dalglish), staged a very bright group, which was divided for cup purposes, and gained two Silver Medals and one Silver-gilt ditto. A fine plant of *Cattleya × Maroni Vine House* var. was given an Award of Merit, also *Cypripedium × Sheila Westfield* var. and *C. × Leeannum virens*. I noted also *C. × I'Ansoni*, *C. × triumphans*, *C. insigne Chantini Lindeni*, and a very fine form of *C. i. Harefield Hall* var., about a dozen plants of the beautiful *Cattleya Dowiana aurea*, several varieties of *C. labiata*, including one very pleasing albino form, &c.

Messrs. Low & Co., Enfield, gained a Silver Medal for a group which included *Miltonia × Binoti*, *M. × Bluntii Lubbersiana*, *Cycnoches peruvianum*, *Cypripedium insigne Harefield Hall* var., *C. i. Sanderæ*, *C. × Maudiaë*, *C. Fairrieanum*, *Oncidium ornithorhynchum album*, *Cattleya labiata Daphne*, *C. l. Cooksoni*, &c.

Messrs. Keeling & Sons, Westgate Hill, Bradford, showed *Cattleya labiata* var., *Cypripedium × triumphans*, *C. × beechense*, and a good hybrid from *C. × Leeannum giganteum × C. insigne sylhetense*, &c.

Max Isaac, Esq., Blundellsands (gr. Mr. Driver), showed an albino of *Cattleya labiata*.

Mr. McLeod, Chorlton-cum-Hardy, showed the beautiful albino *Cypripedium × Rossetti* and *C. × Madame Hye*.

H. THORP.

ALBINISM OF *CYPRIPEDIUM CHARLESWORTHII*.—The question of the correct name of a plant mentioned in the preceding reports is raised. The sequence is *C. Charlesworthii Bromilowiaë*, F.C.C. Manchester, Oct. 8th; *C. Charlesworthii Bromilowianum*, F.C.C. London, Oct. 13th; but whether it is identical with *C. C. album* (*O.R.*, viii., p. 317) we cannot say.—ED.

THE HYBRIDIST.

BRASSOCATTLEYA DANTE.—A distinct and very pretty hybrid, derived from *Cattleya Grossii* × *Brassavola Digbyana*, which has just flowered in the collection of Lt.-Col. G. L. Holford, at Westonbirt. It most resembles the *Cattleya* parent in shape, and has greenish sepals and petals, and the lip is recurved and broadly expanded in front, and narrowed behind, while the colour is light purple, with a broad yellow stripe on the isthmus. It was included in the group staged at the Royal Horticultural Hall on October 27th.

BRASSOLÆLIA × CECILIA.—A pretty little hybrid raised in the collection of R. G. Thwaites, Esq., Chessington, Streatham, from *Lælia pumila* ♀ × *Brassavola Digbyana* ♂, of which the flower has been sent by Mr. Black. It is fairly intermediate in shape, and is nearly five inches in diameter. The sepals and petals are pale lilac, also the front lobe of the lip, which is obscurely three-lobed and neatly fringed, while the throat is paler. The habit is rather dwarf. It was exhibited at the R.H.S. meeting held on October 27th.

CATTLEYA × FREYA.—A very beautiful hybrid derived from *C. × Mantinii* re-crossed with *C. Dowiana aurea* is sent by Mr. C. F. Karthaus, Potsdam, Germany, under the above name. It may be described as an enlarged and glorified edition of the former, being enlarged to twice the size, and equal to a very dark form of it in colour. It is said to be flowering for the first time from a small young plant, and should make a magnificent thing when strong.

 HYBRIDISING ODONTOGLOSSUMS.

ALLOW me to submit some observations which may, perhaps, interest the readers of the *Orchid Review*, if they are really new. I do not remember having seen any similar statement in the literature which is at my disposal.

In the month of May, when I had quite a number of various *Odontoglossums* simultaneously in bloom, I amused myself in making a good many crosses. The kinds used were *O. crispum*, *Pescatorei*, × *Adrianæ*, × *Fascinator*, *triumphans* and *Rossii*. I intercrossed all these in order to provide a good supply of seed for next spring. The usual reaction set in in all the pollinated flowers; the pollen was embraced and occluded by the swelling column, whilst the petals and sepals showed signs of early fading. After a few days all the unmistakable signs of successful hybridisation could be observed in all the plants used for the experiment. After some time, however, there was a marked difference. With some of the plants the formation of a pod proceeded in the usual manner, whilst on others the incipient fruit withered

and fell off like a faded flower. At the time I thought that perhaps the plants were not strong enough to bear fruit, or that I had not been successful in choosing the proper period for fertilising the flowers. Now I have found another explanation. On examining all the plants used, and comparing them with the notes I made about my experiment, I came upon the fact that only those plants refused to bear fruit which had been fertilised with the pollen of *Odontoglossum Rossii*. This pollen is evidently incapable of penetrating into the ovary of the Columbian *Odontoglossums*. The pollen of these on the other hand is quite applicable to the fertilisation of the flowers of *O. Rossii*.

Similar observations have been made with other Orchids. I remember seeing a statement that negative results are invariably obtained with the pollen of *Odontoglossum Uroskineri*, whilst as a seed-parent this species has an excellent reputation. *Odontoglossum grande* is supposed to give negative results either way with all other *Odontoglossums* excepting *O. Insleayi* and *O. Schlieperianum*. Last year I determined to try for myself, and I fertilised two flowers of *O. grande* with pollen of *O. crispum*. Two pods were formed which grew to a large size, but after about four months' time both fell off in an unripe condition.

On the other hand, I have just obtained ripe seed from *Miltonia Warscewiczii* crossed with *Odontoglossum crispum*. I do not know whether it will germinate, but if the result be negative I shall feel inclined to put it down to my want of skill as a raiser of Orchids from seed.

OTTO N. WITT.

Berlin.

[We should be glad to have the experience of others on the subject, for we have previously heard of failures with *O. Rossii*, though we do not remember the precise details. Three hybrids of *O. Rossii* have been recorded, the other parents being *O. × spectabile*, *O. cirrhosum* and *O. × Adrianæ*, but in each case *O. Rossii* appears to have been the seed parent. It is not an isolated case, for there are several hybrids which it is said cannot be obtained from the reverse cross, and in such cases it is clear that failure is due to some mechanical obstacle to fertilisation, for no physiological obstacle exists. Negative evidence is not always conclusive, but in some cases repeated trials have been made, with the same results. It would be interesting if the cause of failure could be ascertained. The ripe seed from *Miltonia Warscewiczii* mentioned should give seedlings of *Odontonia Lairesseæ*, although from the reverse cross. A few seeds might be sown in different places, and at different times, or some experienced friend might be induced to try a few seeds, for the old proverb about not putting all your eggs in one basket is always applicable.—ED.]

ORCHIDS IN SEASON.

SEVERAL handsome flowers are sent from the collection of G. Hamilton-Smith, Esq., of Finchley, by Mr. Coningsby. *Cattleya* × *Chloris* is a very pretty hybrid derived from *C. Bowringiana* × *C. maxima*, and fairly intermediate in shape and colour. A richly-coloured form of *Odontoglossum grande* is from an imported plant now flowering for the first time. A flower of the handsome *Paphiopedilum* × *Imogene* (*Arthurianum* × *ciliolare*) came from the Westfield collection, and was illustrated at page 136 of our fourteenth volume. There are also flowers of *P.* × *Pollettianum magnificum* and *P.* × *Harrisianum superbum*, with what we take to be a form of the handsome *Lælio-cattleya bleckleyensis*. It was obtained about two years ago without name or record of parentage.

An inflorescence of a fine form of *Cattleya labiata* is sent from the collection of Lord Crawford, Scampston Hall, Billington, Yorks, by Mr. Puddle, in which two or three flowers are completely confluent at the apex, while the two lower ones are normal. The upper flower appears quite double, owing to the number and arrangement of the parts. There are five exterior sepals, four broad petals, and two complete lips, with a curious body, which is exactly like half a lip, between them. One side has a petal-like outline, and the other side is lip-like, both in shape and colour. The ovary and column appear to be double, but the latter has three perfect anthers at the apex, which shows that the abnormality represents the union of three flowers, with some of the parts suppressed. It is probably an accidental occurrence, but it gives to the inflorescence a remarkable appearance.

A very curious malformed flower of a hybrid from *Paphiopedilum Rothschildianum* × *Curtisii* is sent by Messrs. Sander & Sons, St. Albans. The sepals and lip are normal, but the staminode is absent, and the character is associated with the presence of a single petal, which stands in front of the dorsal sepal.

A curious inflorescence of *Phragmopedilum* × *Sedeni* is sent by Dr. Miles Johnston, High Lea, Bideford, who remarks that it is so tangled that it may be of interest. It is difficult to say what has happened, for the axis seems completely arrested, and some young buds appear to be developing within the flower.

A curiously abnormal flower of *Paphiopedilum* × *Leeanum Clinkaberry-anum* is sent by Messrs. Stanley & Co., Southgate. There are two broad deflexed free sepals, while the two petals appear to be united into a single one, which takes the place of the dorsal sepal. The lip is normal, but the staminode is entirely absent, and this seems to be the cause of this curious displacement of parts.

CATTLEYA × O'BRIENIANA.

A two-flowered inflorescence of the interesting *Cattleya* × *O'Brieniana* is sent from the collection of G. Hamilton-Smith, Esq., Killoran, Finchley, by Mr. Coningsby, who remarks that the plant was purchased about two years ago as an imported *C. Walkeriana*, but that it differs not only in the flowers, but also very much in habit. He describes the pseudobulbs as six to nine inches long, and very stout, with a pair of leaves to each. In this character, as well as in the shape and colour of the flowers, the influence of *C. Loddigesii* are very clearly seen. *C. dolosa*, which is very closely allied to *C. Walkeriana*, is generally considered to be the other parent. It would be interesting to cross the two species together, and thus clear the matter up finally.—R. A. R.

NOTES.

Two meetings of the Royal Horticultural Society will be held at the Royal Horticultural Hall, Vincent Square, Westminster, during November, on the 10th and 24th, when the Orchid Committee will meet at the usual hour, 12 o'clock noon.

The Manchester and North of England Orchid Society will hold meetings at the Coal Exchange, Manchester, on November 5th and 19th. The Committee meets at noon, and the exhibits are open to inspection from 1 to 4 o'clock p.m. The following meeting will be held on December 3rd.

The magnificent group of Orchids exhibited by Lt.-Col. G. L. Holford at the R.H.S. meeting held on October 27th, is figured in the *Gardeners' Magazine* for October 31st (p. 822).

A photograph of the large and very beautiful *Vanda cœrulea Charlesworthii*, which received a First-class Certificate from the R.H.S. on October 27th, is sent by Messrs. Charlesworth & Co., Haywards Heath. It is said to have been pure white from first to last, not even the lip showing any trace of lilac. It is a great acquisition.

A photograph of a well-grown plant of *Cattleya labiata*, bearing spikes of five and six flowers, is sent from the collection of the Rt. Hon. J. Chamberlain, M.P., Highbury, Birmingham, by Mr. Mackay. It shows what this beautiful autumn-flowering species is capable of under good culture.

From a note at page 340 it will be seen that the position of the nomenclature of multigeneric hybrids is again under discussion. The R.H.S. Orchid Committee remarks that not more than two generic names can

conveniently be combined to form a new generic name. Yet there may be exceptions, for they themselves recognised *Brassocatlælia* over ten years ago, granting a certificate to a plant so named by Sir Trevor Lawrence to indicate its origin from *Brassavola*, *Cattleya* and *Lælia* (*O.R.* vi. p. 30). Some three years later the name *Sophrocatlælia* was formed on the same system. Of late, however, these names seem to have got rather out of hand.

ORCHID PORTRAITS.

CATASETUM RUSSELLIANUM.—*Journ. Hort.*, 1908, ii. p. 315, with fig.

CATTLEYA HARRISONIÆ, STANLEY'S VAR.—*Garden*, 1908, ii. p. 483, with fig.

CATTLEYA × RUTILANT.—*Journ. Hort.*, 1908, ii. p. 363, with fig.

CATTLEYA × VENUS?—*Gard. Chron.*, 1908, ii. p. 258, fig. 112; *Gard. Mag.*, 1908, p. 751, with fig.

CYPRIPEDIUM × ACTÆUS BIANCA.—*Gard. Chron.*, 1908, ii. p. 261, fig. 114.

CYPRIPEDIUM × BIANCA SUPERBUM.—*Gard. Mag.*, 1908, p. 762, with fig.

CYPRIPEDIUM CHARLESWORTHII BROMILOWIANUM.—*Gard. Chron.*, 1908, ii. p. 310, fig. 132.

CYPRIPEDIUM × EMPEROR OF INDIA.—*Journ. Hort.*, 1908, ii. p. 421, with fig.

EPIPACTIS GIGANTEA.—*Garden*, 1908, ii. p. 683, with fig.

ODONTOGLOSSUM PESCATOREI SANDERÆ.—*Gard. Mag.*, 1908, p. 785, with fig.

ODONTOGLOSSUM PESCATOREI WESTONBIRT VAR.—*Gard. Chron.*, 1908, ii. p. 246, suppl. plate.

POLYSTACHA FLEXUOSA.—*Gard. Chron.*, 1908, ii. p. 276, fig. 120.

SOPHRO-CATT-LÆLIA DANÆ SUPERBA.—*Journ. Hort.*, 1908, ii. p. 339, with fig.

ANSWERS TO CORRESPONDENTS.

[Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An ADDRESSED postcard must be sent if a reply by post is desired (abroad, reply postcards should be used). Subjects of special interest will be dealt with in the body of the work].

Enquirer. The rule for Latinising names is really very simple. It consists of adding "i" or "ii" to the name to indicate the masculine gender, and "æ" or "iæ" to indicate the feminine. The letters "i" or "æ" represent the changeable final syllable, but in some cases the letter "i" is required between the name and the final syllable, for the sake of euphony. Personal names ending in "e" do not require the addition of the "i" because "e" does duty for it.

F. P. *Polystachya luteola*.

C. & Co. *Cœlogyne Mayeriana*.

E. B., Paris. *Renanthera*, species at present uncertain.

W. R. S. *Xylobium squalens*, Lindl.

Photographs received, with thanks. G. L. H., J. C., F.S.

Catalogue received. Catalogue of Novelties for 1908-9. James Veitch & Sons, Ltd., Chelsea.

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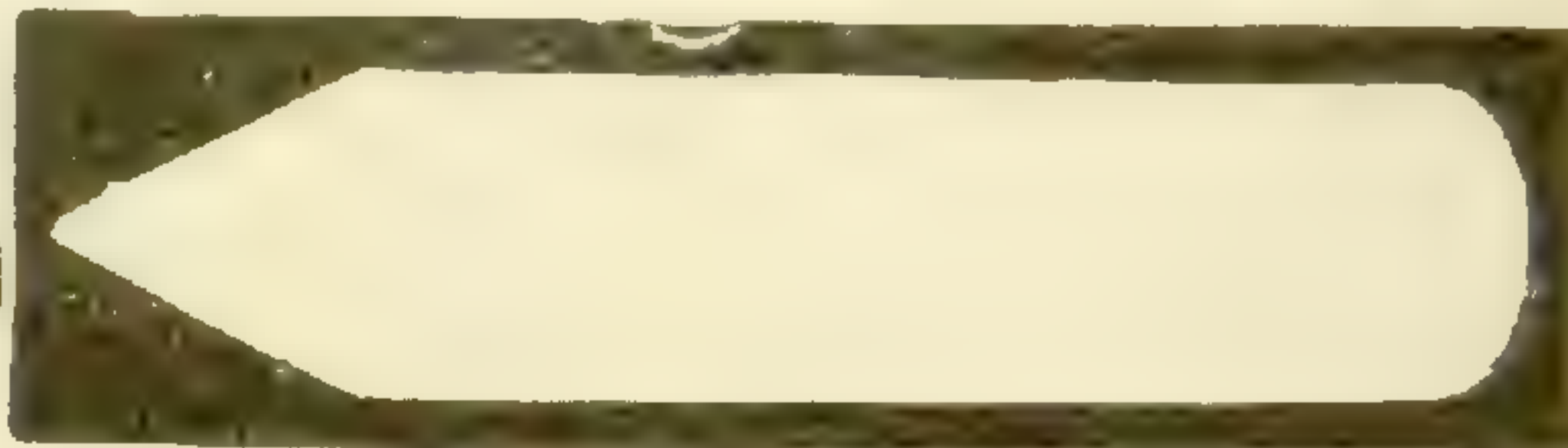
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Vol. XVI.]

DECEMBER, 1908.

[No. 192.]

THE ORCHID REVIEW:

An Illustrated Journal of Orchidology.

Contents.

	PAGE		PAGE
Answers to Correspondents ...	376	Notes... ..	375
Calendar of Operations for December ...	358	Orchid Portraits ...	376
Cynoches maculatum ...	370	Orchid Stud-Book ...	375
Cypripedes, the best twenty hybrid ...	353	Orchids at Westonbirt ...	355
New Orchids ...	371	Orchids from Potsdam ...	372
Bulbophyllum Dixoni... ..	371	Orchids in season ...	373
Cœlogyne albolutea ...	372	Pleurothallis leptotifolia ...	360
Ione grandiflora ...	371	Societies ...	362
Liparis rhoddochila ...	371	Manchester Orchid ...	366
Maxillaria pusilla ...	372	Royal Horticultural ...	362
Scaphyglottis alba ...	372	Vanda cœrulea Charlesworthii (fig. 44) ...	361
Sigmatostalix Eliæ ...	372	Vanda Watsoni ...	354

* * FRONTISPIECE, TITLE PAGE AND INDEX.

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Volumes I. to XVI. can be supplied unbound at 6/-, or bound in cloth, 7/6, postage extra. Cost of postage: book post, 9d. per volume; parcel post within the United Kingdom only, 5d. per single volume (series by weight).

Also cases for binding either volume at 1/6 each, post free throughout the postal union.

All Subscriptions, Advertisements, Communications and Books for review, should be addressed:—The **Editor of the Orchid Review**, Lawn Crescent, Kew.

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THE ORCHID REVIEW.

VOL. XVI.]

DECEMBER, 1908.

[No. 192.

THE TWENTY BEST HYBRID CYPRIPEDES.

THIRTEEN years ago an interesting article by Mr. E. H. Woodall, of Scarborough, appeared in this work, under the title "An Ideal Cypripedium List" (*O.R.*, iii. pp. 300-304), which concluded with a list of twenty-two of the "most desirable kinds," the number being equally divided between species and hybrids. An enormous number of hybrids have appeared since, while some that were then rare have become better known, and it is suggested that we should open our columns for a discussion as to the best twenty hybrids. The question is opened by Mr. Francis Wellesley, of Westfield, Woking, who writes as follows:—

The twenty best hybrid Cypripediums yet seen are, in my judgment:—

- | | |
|---|---|
| C. × <i>Actæus langleyense</i> . | C. × <i>Leeanum</i> , var. J. Gurney Fowler. |
| C. × <i>Æson giganteum</i> . | C. × <i>Maudixæ magnificum</i> . |
| C. × <i>Alcibiades magnificum</i> . | C. × Mr. F. Sander. |
| C. × <i>Beekmanii</i> . | C. × <i>San-Actæus</i> , var. <i>etoniense</i> . |
| C. × <i>Dreadnought</i> . | C. × <i>Sultan</i> . |
| C. × F. K. Sander. | C. × <i>Thalia</i> , var. <i>giganteum</i> (insigne. |
| C. × <i>Gaston Bultel</i> , var. <i>King Edward</i> . | <i>Chantinii</i> × <i>Baron Schröder</i>). |
| C. × <i>Germaine Opoix</i> , Westfield var. | C. × <i>Thalia</i> var. Mrs. Francis Wellesley |
| C. × <i>Helen II.</i> , <i>Orchidhurst</i> var. | (<i>Baron Schröder</i> × insigne <i>Chantinii</i>). |
| (insigne <i>Sanderæ</i> × <i>bellatulum album</i>). | C. × <i>The Baron</i> . |
| C. × <i>Helen II.</i> , <i>Westonbirt</i> var. (i. | C. × <i>The Premier</i> . |
| <i>Harefield Hall</i> var. × <i>bellatulum</i>). | C. × <i>Troilus</i> , var. <i>Cravenianum</i> . |

Of these twenty Cypripediums, five were raised by Mr. Seden for Messrs. Veitch, three by Mr. Alexander for Colonel Holford, three by Mr. T. Armstrong, three by Messrs. Sander & Sons, two by M. Opoix, one by M. Linden, one by M. Dallemagne, and one (Mr. F. Sander) is a natural hybrid imported by Messrs. Sander.

The primary species were varieties of insigne in no fewer than eighteen cases, villosum in six, Spicerianum in five, Fairricanum in four, barbatum, bellatulum and Boxallii in three each, and Charlesworthii, Lawrenceanum Hyeaenum, callosum Sanderæ, Rothschildianum, and Druryi one each.

The parentage of both *Germaine Opoix* and *Gaston Bultel* is uncertain, but without doubt *Fairrieanum* and *insigne* are in both. *C. insigne* is one of the parents of *C. × Mr. F. Sander*, but the other is unknown, and both *villosum* and *insigne* are found in *Beekmanii*, though nothing else is certain in regard to this fine hybrid.

Very high prices have been realised at auction for some of these *Cypripediums*. The record price "under the hammer" for any *Cypripedium* is £300 for *C. × Thalia Mrs. Francis Wellesley*, the next highest being £294 for *Germaine Opoix Westfield var.*, while *Æson giganteum* realised £231 and *The Baron* £126.

No plant of *Alcibiades magnificum*, *Dreadnought*, *Helen II.* (both varieties), *Leeanum var. J. Gurney Fowler*, *San-Actæus var. etoniense*, *Sultan*, *The Premier*, or *Troilus Cravenianum* has been offered for public competition.

A word of warning is necessary. The high prices above quoted have caused untrue stock of certain of the above-mentioned plants to be offered as "portions of the original." I know this to be the case in regard to both *Thalia Mrs. Francis Wellesley* and *Germaine Opoix Westfield* variety.

Two or three points strike us in perusing this list, but we will not anticipate the opinions of our readers, whose views on the subject we hope to have.—ED.

VANDA WATSONI.

(See FRONTISPIECE).

THE frontispiece to our present volume represents a group of the very distinct and pretty *Vanda Watsoni*, which was introduced by Messrs. Sander & Sons, through their collector, W. Micholitz, who found it in the interior of Annam at 5,000 feet elevation. It was dedicated to Mr. W. Watson, Curator of the Royal Botanic Gardens, Kew, and flowered for the first time with Mr. F. W. Moore, at Glasnevin, nearly four years ago. The species is nearly allied to *V. Kimballiana*, but differs in its white flowers, concave lip, and short rounded sac, instead of a somewhat elongated spur. The interior of the sac and the crest are yellow, with some red-brown dots. The photograph was kindly sent by Lt.-Col. G. L. Holford, Westbonbirt, Tetbury, and represents a group of plants in that gentleman's collection. It is a free-growing and graceful species, and an interesting addition to the genus. A curious character of the species may be observed in the figure, namely, that although the rachis of the inflorescence is dark, the pedicels of the flowers are white, forming a marked contrast. The terete leaves probably indicate that, as in the case of *V. teres*, the species prefers a sunny situation.

ORCHIDS AT WESTONBIRT.

IN the concluding note of our last month's article entitled "Orchids at Westonbirt" (pp. 321-328) we alluded to a new range of Orchid houses recently erected by Lieut-Col. Holford, which embodies several interesting features, and now we are able to give some particulars of the same.

Owing to the rapid growth of the collection it became evident that unless the plants were to suffer from overcrowding, increased accommodation must be provided. In considering the best way of doing this Mr. Alexander proposed to erect a block of houses quite away from the existing ones and out in the open. Some novel structural details were also proposed, and in spite of one or two dissentient opinions Col. Holford decided to carry out the idea, the situation chosen being completely open, with only a wood to the north as a shelter against cold winds.

The new block consists of three parallel ranges, running north and south, with an interval between them, these being divided by a partition in the middle into six houses, each fifty feet long by twelve feet broad. At the north they are connected to the potting shed, boiler houses, &c., everything in this respect being very conveniently arranged.

The houses themselves are particularly light and airy structures, with side stages and an open iron-work central stage, the latter having an open pathway throughout, so that the pots, stages, &c., can be syringed from beneath, thus ensuring the necessary supply of moisture in the atmosphere, on which successful culture so largely depends. Tanks for storing rain-water are placed here and there beneath the stages, so as to be readily accessible. Second, or moisture-retaining stages, if not abolished, are greatly modified in form, being limited to iron sheeting laid on the pipes—themselves laid close to the ground, on which some moist earth is spread, and this serves to deflect the heat and prevent it from reaching the plants before taking up a sufficient amount of moisture. The idea is that the second stage should be as far from the plants as possible, so as not to impede a proper circulation of air at any point. In the *Odontoglossum* house, where little artificial heat is necessary, these iron sheets have not yet been fixed, though Col. Holford remarked that they could be added at once if thought desirable. The amount of piping is greater than is often used, and this enables the required temperatures to be kept up without the pipes themselves being hot enough to do mischief.

Other points, such as drip-proof sash-bars, ample ventilation, shading, cinder paths, &c., are naturally of an up-to-date character. In respect to shading we have to correct an error which inadvertently crept into our notes at page 321. The blinds used at Westonbirt are not lath blinds, but are

made of a loose cotton material, generally known as Manchester shading, for which Mr. Alexander expresses a decided preference. The error arose through the misreading of a hasty and imperfect note.

The range was in the first place intended chiefly for seedlings, but the experiment has proved so successful that some of the species which are the most difficult to cultivate have been moved here, with satisfactory results. We may now mention some of the contents of the houses.

The first house entered contained, among other things, a lot of duplicate plants which were being propagated from back bulbs, and all looked very promising. A plant of *Cattleya* × *Hardyana* was pointed out, one of the earliest plants of this hybrid which appeared, and which for a long time made no progress, though now it has four bulbs. We noted also a seedling from *Lælia anceps* and *L. Dayana* in spike, and some flowering seedlings from *Cattleya Schroederæ* and *Lælia Jongheana*, which are forms of *Læliocattleya Olivia*. The second house was largely devoted to spring-flowering species of the *Cattleya* group, all in the most promising condition.

The next house contains a large number of seedling *Cattleyas* and *Læliocattleyas*, many in flowering condition, and among them we noted some plants of the beautiful *C. × Dusseldorfii* var. *Undine*, some good *C. × Fabia*, the beautiful *C. × Hardyana alba* with two flowers, good examples of *C. × Clarkiæ*, a fine *L.-c. Elba* (*C. Warscewiczii* × *L.-c. Ingramii*), a brilliant form of *L.-c. Berthe Fournier*, *L.-c. Arethusa* (*C. Harrisoniana* × *L.-c. exoniensis*) with four good spikes, a pretty hybrid between *C. Harrisoniana* and *L.-c. luminosa*, and some good examples of *Lælia* × *Gwennie*, a pretty and free-flowering hybrid between *L. Cowanii* and *L. Jongheana*. We also observed a lot of capsules, including some of *Brassavola Digbyana*, which is being used successfully as a seed parent, though it was pointed out that the seeds are only found at the apex of the capsule.

In the fourth house many beautiful things were in bloom, those noted including a very pretty *Cattleya* × *Heloisiæ*, the new *Brassocattleya Dante* (*C. Grossii* × *B. Digbyana*), a fine example of *Læliocattleya Golden Beauty* with a spike of ten flowers, and a very interesting seedling from *Lælia anceps* ♀ and *L. autumnalis* ♂, producing two spikes, which it is suspected may prove to be a home-raised *L. × Gouldiana*, with other interesting things.

One side of the fifth house was literally a mass of flowers, and we noted an exceptionally fine *Cattleya labiata*, *C. × Clarkiæ* with a nine-flowered spike, a lot of *C. × Fabia*, *C. × Thayeriana* with three fine racemes, some excellent forms of *C. × Hardyana*, *C. × Waldemar*, a brilliant hybrid between *C. Dowiana* ♀ and *C. × Whitei* ♂, *Brassocattleya Siren* and *B.-c. Pluto*, *Læliocattleya Ortrude* (*L. anceps* × *C. Dowiana*), good examples of *L.-c. Lustre*, one being exceptionally large and richly-

coloured, the brilliant L.-c. Golden Oriole, good examples of L.-c. Priam, and a little gem of a hybrid between C. Harrisoniana and L.-c. Charlesworthii, bearing many lilac flowers, with deep purple veining on the lip. The great majority, however, we could only admire and pass on, for they were far too numerous to note in detail.

The *Odontoglossum* house contains a lot of sturdy plants, in the most robust health, some that were in spike or flower being quite remarkable. A sturdy plant of *O. × Andersonianum*, Westonbirt var., bore a noble panicle with seven side branches, and an aggregate of about eighty fine flowers, cream white in colour, with large red-brown blotches, and formed quite a picture. A form of *O. crispum* had a panicle of buds with eight side branches, and one of *O. × crispo-Harryanum* had two panicles with three side branches, while another plant of the latter had twenty-three expanded flowers of great beauty. *O. crispum*, Westonbirt var., bore a spike of twenty-one flowers, with one side branch, the shape and size being quite exceptional, and the colour blush white, with only a few spots on the lip. A good white *O. crispum* bore a spike of sixteen flowers. Some good *Miltonias* were also noted, and a plant of *Odontioda Devossiana* was pointed out, of course not in flower, or it would have revealed itself.

These houses contained almost a second collection, so numerous are the plants, while their culture leaves nothing to be desired. The whole collection is remarkable, both as regards culture and quality, and after inspecting it in detail one is able to realise how it is that such magnificent groups from Westonbirt appear from time to time at our leading shows. Up to the end of 1907 nine Gold Medals had been awarded to groups from the collection, all from the R.H.S., and since then the following others have been gained: R.H.S., March, 1908; Ghent, April, 1908; R.H.S., Temple Show, 1908; York Gala, July, 1908, York Gala Medal, R.H.S. Medal, and Veitch Memorial Medal; and R.H.S., October, 1908; making a total of sixteen. At the Temple Show in 1907 the Veitchian Cup was also awarded to a group from Westonbirt. The group shown at Ghent was the largest yet staged from the collection, having an area of over 300 square feet. The record is a remarkable one, and both Col. Holford and his able grower, Mr. Alexander, must be congratulated on their enthusiasm and success.

Col. Holford has a good collection of paintings of certificated Orchids, and a complete catalogue of the collection, in which the history and parentage of every plant can be turned up in a moment by means of the number. Every plant is numbered, the numbers being stamped on a lead label, which is clipped on to the rim of the pot. Orchid growing as practised at Westonbirt is a delightful hobby, and a day spent with Col. Holford among his plants will not soon be forgotten.

CALENDAR OF OPERATIONS FOR DECEMBER.

By W. J. MORGAN, Rann Lea Gardens, Rainhill, Lancs.

CYPRIPEDIUMS.—Most of the *C. Fairrieanum* section will be past or nearly past flowering, and as soon as possible after blooming the plants should all be examined, and those that require potting should be done at once. Any varieties that require dividing should also be attended to when all the old material has been shaken away. It is much better to divide when potting, for then one can see how to do it without cutting through the roots, as is too often the case when the knife is just pushed down through the rhizome when the plants are in the pots. Even if the greatest care is used some of the roots are sure to get cut or injured, and in dividing a plant every root is valuable. Again, too often the growth will get its leaves partly cut through, and these leaves will soon go yellow, and the division will be lost. When the plants are broken up the strong growths should be potted up to make specimens, and the weaker and flowered growths potted into small pots for propagating purposes. A flowered growth is the most valuable for propagating, as generally they will break three or four times, whereas a new shoot will complete its growth before breaking.

In potting the plants also care should be taken not to break the roots. These should be spread out gradually, working in lumpy pieces of peat and loam between them. Do not in any case just fill up the pot with compost and then ram all the roots to the bottom. Careless potting is the cause of half the troubles of Orchid growing, and a well potted plant will never look back. When a plant looks sickly the fault can generally be found in the potting. We find that *Cypripediums* are better potted like ordinary plants, that is about half an inch below the rim of the pot, and not mounded up. We also find that, unlike many Orchids, they require plenty of pot room, and much better flowers are obtained from plants with plenty of material to feed on than pot-bound plants, and thrip will not be nearly so likely to make its appearance on strong healthy leaves as on those that are stunted. For potting the *C. Fairrieanum* section we use a mixture of quite three parts of good yellow loam, one part lumpy peat and leaves, and plenty of crushed crocks. The compost must be kept open. Shake all dust out through a quarter inch sieve, and if the material is dry damp it, so that it will just bind when potting. As loam varies so much in quality, it will be found to be most economical to obtain the best fibrous quality. It is not necessary to buy it specially prepared. A good potting loam, we find, suits quite well, for the fine material that is sifted out can be used for other potting.

Plants that have been newly potted should be given a temperature of 5° to 10° warmer than is required for growing established plants, then they will quickly re-establish themselves. Syringe them two or three times daily

until the young roots make their appearance on the top of the pots, when they can be removed to their growing quarters. If the compost is damp when they are potted the syringe will keep them going until they produce their new roots, and also keep the foliage clean.

The *C. bellatulum* section generally gives a lot of trouble at this time of year to keep the leaves from damping. They should be kept fairly dry at the roots, in fact we find syringing between the pots will keep them going for several weeks during the dull weather. They like a fairly high temperature, and 70° for the lowest suits them first rate. Fumigate or spray them occasionally to keep them free from thrip. When grown in a high temperature flowers can be had nearly all the year round, and where hybridising is carried on they will be found most useful for this purpose. Most of the hybrids have very beautiful flowers, and are well worth growing, as they form a section quite unlike the majority of *Cypripediums*. The great fault with them is their short stems, but no doubt in a few years the hybridist will produce in this section stems quite up to the length of other varieties, which will greatly enhance their value.

DENDROBIUM WARDIANUM will be pushing out its buds, and can be put into a slightly warmer position if the flowers are required early, but do not give more water than will keep the bulbs plump. They should not be placed in a temperature of more than 60° for a week or so after removing them from their resting quarters, or the buds will turn yellow and drop off. Any of the hybrids that are pushing their buds up can be given similar treatment. Syringing overhead on fine days will help to keep them plump without much root watering.

Seedling Dendrobies should not be dried off as severely as old established plants, and as soon as the turn of the season is here it is better to let them grow, and give them a fairly high temperature, and then, with generous treatment, they should make two bulbs instead of one, and much better flowers will be obtained when they bloom. If seedlings once get shrivelled they take a long time to start again, and a year's growth is lost. Keep all the plants as near the glass as possible. At a distance of about twelve inches they will be quite safe from the effects of falls of temperature, if the inside temperatures are watched. Give air whenever possible, if only a little in the middle of the day, as it always keeps the house fresh, and there will be no danger of the leaves spotting or getting soft. Spray or fumigate occasionally to keep them clean, and free from thrip and red spider, as there is always more danger from these insects when using more fire heat.

CATTLEYAS AND *LÆLIAS* and their hybrids will want watching for scale during their resting season, as with drier conditions and more fire heat these soon get ahead if not checked. Spraying and sponging will keep the plants in a healthy condition. *Cattleya Trianae*, *C. Percivaliana* and any

hybrids which may be pushing up their flowers, will need water oftener than those that are still resting. These are better staged by themselves, and then they do not get overlooked when watering. When these plants are in flower and several different mixtures have been used as a potting compost, notes should be made in comparing the flowers as to which have most substance, and last longest, as I think that good flowers are of far more value than sappy bulbs. Some mixtures give fine bulbs but inferior flowers. I find the most satisfactory way is to compare the flowers, as it is a much better guide to work on for next season. In making comparisons this year we find that the fibre mixture produces the finest flowers. A leaf mixture makes good bulbs but inferior flowers. I do not mean to say that leaves should be altogether discarded when such a result is found, but more fibre will need to be added next season in order to see what result we get then.

Fogs this year have so far been very scarce, here at any rate, and it has given us a better chance to prove our *Cattleya* flowers from different mixtures.

So long as the weather keeps open plenty of moisture should be kept going in the houses, as it encourages plants to root, so long as a stagnant atmosphere is not created. A little air every day will prevent this, and if given with care and not just put on and taken off when one happens to remember it, the plants will benefit by it.

TEMPERATURES for the next few weeks should be kept about as advised in last month's Calendar, and care should be taken to keep them as even as possible. Violent fluctuations are very detrimental to the health of the plants.

PLEUROTHALLIS LEPTOTIFOLIA.

IMAGINE a tiny *Leptotes* with a creeping rhizome, leaves reduced to under three-quarters of an inch long, and very slender scapes, twice as high as the leaves, bearing two or three yellow *Pleurothallis*-like flowers, a quarter of an inch long, and you have this curious little species, which has just flowered with Mr. H. A. Tracy, at Twickenham. It had been imported with or taken off something else, and the record had been lost, but I soon succeeded in identifying it. It is a native of Brazil, and was described by Babosa Rodrigues in 1877 (*Gen. et Sp. Orch. nov.*, i. p. 15), from materials collected in the province of Minas Geraes. Then it appeared in cultivation with Herr Wendland, at Herrenhausen, and was figured by Dr. Kränzlin (*Xen. Orch.*, iii. p. 134, t. 276, fig. 1), and afterwards it was collected in the Province of Rio de Janeiro, by Dr. Glaziou, and in one or two other localities. The short terete leaves and creeping habit give it a very curious appearance, and out of flower no one, without previous knowledge, would suspect it to be a *Pleurothallis*.

R. A. R.

VANDA CÆRULEA CHARLESWORTHII.

THE annexed figure represents the beautiful albino *Vanda cœrulea Charlesworthii*, which gained a First-class Certificate at the R.H.S. meeting held



Fig. 44. VANDA CÆRULEA CHARLESWORTHII.

on October 27th last, when exhibited by Messrs. Charlesworth & Co., Haywards Heath. The figure shows the flowers a little below natural size, and is reproduced from a photograph kindly sent by Messrs. Charlesworth. It conforms to the type in every respect except that of colour, which is pure

white, with a little yellow on the base of the lip. It is a great horticultural acquisition, and we believe that nothing like has appeared before. The photograph showed a spike of five flowers, but the two upper ones have been omitted to bring the figure within the limits of our space.

SOCIETIES.

ROYAL HORTICULTURAL.

A MEETING of this Society was held at the Royal Horticultural Hall, Vincent Square, Westminster, on November 10th, when there was a very good display of Orchids, and the awards consisted of four Medals, one First-class Certificate, three Awards of Merit, and four Botanical Certificates.

J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. Davis), received a First-class Certificate for the beautiful *Soprocattleya Doris* (*S. grandiflora* × *C. Dowiana aurea*), bearing several orange-scarlet flowers, with some deep yellow veining on the throat of the lip.

Lt.-Col. G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), received an Award of Merit for *Cypripedium* × *Dante magnificum* (× *Euryades* × *Charlesworthii*), a beautiful flower having a white dorsal sepal blotched with rosy purple, and the petals and lip greenish-yellow veined with brown. He also sent the brilliant *Læliocattleya Golden Beauty* (*L.-c. Ernestii* × *L.-c. Henry Greenwood*), bearing a spike of ten deep yellow flowers with the front of the lip ruby crimson, and *Brassocattleya Mrs. J. Leemann*, Westonbirt var., a beautiful primrose yellow flower, tinged and veined with lilac.

Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. Chapman), received an Award of Merit for *Cattleya* × *Fabia Cooksonæ* (*C. Dowiana aurea* × *C. labiata Cooksonæ*), a very handsome form, with a brilliant rosy-crimson lip.

Leopold de Rothschild, Esq., Gunnersbury House, Acton (gr. Mr. Hudson), received an Award of Merit for *Cattleya* × *Clarkiæ intensa* (*bicolor* × *labiata*), bearing a fine spike of rosy purple flowers, with the front of the lip very deep crimson purple.

Sir Trevor Lawrence, Bart., K.C.V.O., Burford, Dorking (gr. Mr. White), sent three very distinct and interesting hybrids from *Lælio-cattleya Adolphus* × *Cattleya Harrisoniana*, one having rather small yellow flowers, a second cream white sepals and petals, closely dotted with purple, and the lip margined with purple, while the third was larger, and had well blotched sepals and petals, and a purple lip. He also received Botanical Certificates for the following:—*Bulbophyllum cupreum*, bearing a dense raceme of orange-yellow flowers; *B. lilacinum*, similar in habit, but having

lilac-coloured flowers spotted with purple; *Polystachya Laurentii*, a Congo species, bearing a panicle of cream white flowers; and *Maxillaria phœnicanthera*, like a small *M. punctata*, and having light yellow flowers spotted with purple.

J. Foster Alcock, Esq., Northchurch, Berkhamstead, sent *Cypripedium* × *nobile*, and two other good hybrids.

H. H. Armitage, Esq., Sheffield (gr. Mr. Baker), sent a flower of a pretty light-coloured hybrid between *Cattleya Dowiana aurea* and *C.* × *Victoria-Regina*.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. Day), sent a fine specimen of *Cattleya labiata Amesiana* with a spike of four flowers, and *Lælio-cattleya Clive*, Keswick var.

W. P. Horton, Esq., Cravenhurst, Seaford, staged a small group of *Cypripediums*, the best being a fine form of *C. Cobiaë*.

G. P. Walker, Esq., Heatherwood, Putney (gr. Mr. McGregor), showed *Lælio-cattleya Heatherwood* (*L.-c.* *Schilleriana* × *C. granulosa aurea*), having cream white flowers with a bright purple lip.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent *Cattleya labiata Her Majesty*, a fine pure white flower, with a faint tinge of pink in front of the yellow disc of the lip, and *C. Gaskelliana Delight*, a good white with a deep rose blotch on the front lobe of the lip, and the disc light yellow.

Messrs. Charlesworth & Co., Haywards Heath, staged a choice group to which a Silver Flora Medal was given. It contained the beautiful white *Vanda cœrulea Charlesworthii*, *Cattleya* × *Vulcain marginata*, having deep rose-purple flowers, with a white margin to the lip, the beautiful *C.* × *Venus*, *Cycnoches maculatum* with two long pendulous racemes of male flowers, the brilliant *Sophrolælia Eros*, *Lælio-cattleya Phœbus* (*L.-c.* *Cappei* × *C.* × *Iris*), a brilliant flower, having golden yellow sepals and petals, and a deep crimson lip, the beautiful *Odontioda Bohnhoffiæ*, *Odontoglossum crispum xanthotes Charlesworthii*, and numerous other fine things.

Messrs. James Cypher & Sons, Cheltenham, also received a Silver Flora Medal for a fine group, the centre containing many good examples of *Dendrobium Phalænopsis*, including the dark variety *Statterianum* and two nearly white forms with *Cattleya labiata*, *C.* × *Mantini*, &c. *Cypripediums* were well represented, and included several *C. insigne Sanderæ*, *C. i. Harefield Hall* var., *C. Fairrieianum*, and others.

Mr. H. A. Tracy, Orchid Nurseries, Twickenham, also received a Silver Flora Medal for a fine group, including some good varieties of *Odontoglossum* × *amabile*, and *O. crispum*, some good *Oncidium varicosum* and *Cattleya labiata*, a pretty hybrid *Cattleya* from *C.* × *Parthenia* and *C.*

labiata alba, having white flowers veined with purple on the lip, some good *Cypripedium Spicerianum* from home-raised seed, &c.

Messrs. Hugh Low & Co., Enfield, received a Silver Banksian Medal for a good group, including the pretty white varieties of *Cattleya labiata*, Queen Maud, La Vierge and reedleyensis, *Cypripedium* × *Olivia*, *Dendrobium formosum*, *Cycnoches chlorochilon*, and others.

Messrs. Sander & Sons, St. Albans, showed a plant of *Chondropetalum Fletcheri*, having emerald green sepals and petals spotted with dusky brown, and a cream-coloured slightly denticulate lip.

At the meeting held on November 24th, there was a fine display of Orchids, and the Awards consisted of six Medals, two First-class Certificates, three Awards of Merit, three Botanical Certificates, and one Cultural Commendation.

Lt.-Col. G. L. Holford, C.I.E., C.V.O., Westonbirt (gr. Mr. Alexander), sent *Cypripedium* × *Hitchinsiae* superbum, a finely spotted form, a hybrid from *C.* × *Mrs. Tautz* and *C. hirsutissimum*, showing very clearly the influence of the latter, and *C.* × *Arethusa* (*C.* × *Milo* × *Sallieri aureum*), the latter gaining an Award of Merit. The flower is of fine shape and colour, the dorsal sepal pure white, with a greenish yellow base, and clear rose-purple spotting, and the petals and lip lemon yellow with some brownish veining.

J. H. Grogan, Esq., Slaney Park, Baltinglass, Co. Wicklow (gr. Mr. Oliver), received an Award of Merit for *Odontoglossum* × *Groganiæ* (*Edwardii* × *Uroskinneri*), a fine hybrid, most like the former in general character, and bearing a strong branching pannicle of purple flowers, with a rosy-mauve lip and yellow crest.

Mrs. Temple, Leyswood, Groomsbridge (gr. Mr. Bristow), received a Cultural Commendation for a very fine plant of *Cœlogyne barbata*, bearing six fine spikes.

E. Bostock, Esq., Springfield, Cliftonville, Northampton, sent *Cypripedium Actæus springfieldiense*, a pale greenish-yellow flower with the greater part of the dorsal sepal white.

Mrs. Talbot Clifton, Lytham Hall, Lytham (gr. Mr. Float), exhibited a fine plant of *Odontoglossum Hallii*, bearing a strong branched spike of 38 flowers.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), sent *Odontoglossum* × *waltonense* var. (*Kegeljani* × *crispum* Raymond Crawshay), a handsome yellow variety.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), sent the handsome *Cypripedium* × *Ernest Read*, and a fine inflorescence of *Cymbidium* × *Maggie Fowler*.

Frank Lloyd, Esq., Croydon, sent a good form of *Cattleya* × *Mrs. Pitt*.

Mr. McKellar, gardener to His Majesty the King, Windsor, sent some good cut examples of *Dendrobium formosum giganteum*, showing much variation in the depth of the yellow colour of the disc.

Gurney Wilson, Esq., Haywards Heath, received a Botanical Certificate for *Oncidium micropogon*, a Brazilian species allied to *O. barbatum*, and having bright yellow flowers with some light brown markings.

Messrs. Sander & Sons, St. Albans, sent a choice group, which gained a Silver Flora Medal. It contained a large number of *Cypripedes*, a fine plant of *Cirrhopetalum Medusæ*, *C. Roxburghii*, *Oncidium uniflorum*, *Vanda Watsoni*, and some plants of the curious *Chondropetalum Fletcheri*, showing rather more of the *Chondrorhyncha* influence than formerly. First-class Certificates were given to *Vanda cœrulea* var. *R. Chollet*, a very large bright blue form, and to *Cypripedium* × *Dreadnought* (*Troilus* × *insigne* Harefield Hall var.), a remarkably fine hybrid, having the dorsal sepal three inches across, yellow on the lower half and white above, with some purple spotting in the centre; the petals undulate, suffused and veined with brown, spotted with dark brown at the base, and margined with yellow; and the lip tinged with brown in front.

Messrs. Charlesworth & Co., Haywards Heath, also received a Silver Flora Medal for a choice group, including the brilliant *Odontioda Bohnhoffiæ*, *Odontoglossum Uroskinneri magnificum*, a fine form, having the lip spotted with rose, *Lælio-cattleya* Sunray, a deep yellow flower with ruby crimson lip, *Cœlogyne sulphurea* with three spikes, a fine *Oncidium bicallosum*, and other good things.

Messrs. James Cypher & Sons, Cheltenham, received a Silver Banksian Medal for a fine group, consisting chiefly of good forms of *Cypripediums*.

Messrs. Heath & Sons, Cheltenham, received a Silver Banksian Medal for a good group of *Cypripediums* and other Orchids, among which the handsome *Cypripedium* × *Blanche Moore* was noteworthy.

Messrs. Hugh Low & Co., Enfield, also received a Silver Banksian Medal for a bright and varied group, including a pretty white form of *Cattleya labiata* with a lilac front to the lip, the brilliant *Cochlioda vulcanica*, *Platyclinis latifolia*, *Cœlogyne fuliginosa*, several examples of *Cycnoches chlorochilon* and *malculatum*, and other good things.

Messrs. James Veitch & Sons, Chelsea, received an Award of Merit for *Cypripedium* × *Sanactæus etoniense* (× *Actæus langleyense* × *insigne* Harefield Hall var.), a very fine hybrid, having the dorsal sepal white with a yellowish green base, spotted with rose and purple, and the petals and lip greenish-yellow, tinged and veined with purple brown. They also sent *C.* × *Queen of Spain* (× *Leeanum* × *Euryades*), a handsome form, having a bright rose dorsal sepal lined with claret in the centre and spotted at the

sides, while the margin is white and the basal area green, the petals tinged with reddish purple, and the lip mahogany brown in front.

Messrs. Armstrong & Brown, Tunbridge Wells, showed *Cattleya labiata* Amesiana, *Neobenthamia gracilis*, the fine *Cypripedium insigne* syhletense giganteum, *Cœlogyne fuliginosa* and *Bulbophyllum Careyanum*, the two latter receiving Botanical Certificates.

M. Mertens, Mont St. Amand, Ghent, received a Bronze Banksian Medal for a small group of hybrid *Odontoglossums*, among them being *O.* × *Vuylstekeæ* and a good dark *O.* × *Vuylstekei*.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

AT a meeting of the above Society, held in the Coal Exchange, Manchester, on November 5th, a fine display of Orchids of excellent quality was staged. Over fifty plants were placed before the Committee, who awarded five First-class Certificates and eight Awards of Merit. The following members of the Committee were present:—Messrs. E. Ashworth (Chairman), Rd. Ashworth, Cowan, Thorp, Ward, Warburton, Ball, Keeling, Holmes, Ashton, Parker and Weathers (Secretary).

Richard Ashworth, Esq., J.P., Ashlands, Newchurch (gr. Mr. Fletcher), staged a most interesting group of mixed plants of excellent type, all showing evidence of high cultivation. Of the *Odontoglossums* I noticed several fine blotched *O. crispum*, *O. c. xanthotes*, two distinct and well-flowered *O.* × *Lambeauianum*, *Dendrobium Phalænopsis*, many fine *Cattleyas*, notably a finely shaped *C.* × *Pertia*, *C. labiata* var. Mr. J. Bradshaw, and a highly coloured *C.* × *Fabia*, R. Ashworth's var. This last had retained a more than usual amount of *C. Dowiana* in the lip, and was given an Award of Merit. I noted also *Lælio-cattleya* × *Alcyone*, *L.-c. bletchleyensis*, and a nice lot of *Cypripediums*, the chief of which were *C.* × *memoria-Moensii*, *C.* × *Memnon*, a good *C. Fairrieanum*, *C.* × *Aphrodite*, &c. (Silver-gilt Medal).

Ziba A. Ward, Esq., Northenden (gr. Mr. Weatherby), staged a most beautiful group, the chief feature being well grown plants of *Odontoglossum*, hybrids and species, and well-flowered pans of *Cypripediums* of choice varieties. I noted a very fine *Odontoglossum* × *loochristiense*, several fine *O. crispum* with large round flowers, *O.* × *crispo-Harryanum*, *O.* × *Wilckeanum*, while centrally stood a new and beautiful hybrid *O.* × *Wardiæ* (*O. crispum* *Lucieniana* × *O.* × *Vuylstekei*), with flowers of a bright terra cotta shade, the lip richer and darker in colour, the sepals and petals full at the base, slightly reflexed and rather pointed, and the whole relieved with a bright yellow crest and tothing (First-class Certificate). The *Cypripediums* included strong plants of *C. insigne* *Sanderæ*, *C. i.* *Perfection*, *C. i.* *Harefield Hall* var., *C.* × *Baron Schröder*, &c. (Silver-gilt Medal).

A. Warburton, Esq., Haslingden (gr. Mr. Dalglish), staged a fine group of *Cypripediums*, relieved at each end with albino varieties of *Cattleya labiata*. I noted *C. l. Cooksoni*, *C. l. Purple Moth*, *C. l. alba*, *C. l. Gilmourii*, &c. Of the *Cypripediums* perhaps the best was *C. insigne Excelsior*, a very large flower, but almost identical with *C. i. Harefield Hall* var., which gained a First-class Certificate. *C. × Pomona*, Vine House var. gained an Award of Merit. *C. × triumphans*, *C. × Stonei*, *C. Loeanum giganteum*, &c., completed an interesting group, which for "cup" purposes gained two Silver Medals.

G. Shorland Ball, Esq., Burton, Westmoreland (gr. Mr. Herdman), gained a Silver Medal for a group composed wholly of *Cypripediums* of high quality. *C. × Memnon* var. *Queen Alexandra* gained an Award of Merit, and *C. × Loeanum Balliæ*, a grand flower with large dorsal sepal, the white margin being beautifully crimped, a First-class Certificate. I also noted *C. × Eve*, *C. × Maudiaë*, *C. × Hoyleanum*, *C. × Earl of Tankerville*, *C. × Thalia giganteum*, *C. × Gracie*, and many others of the first rank.

H. J. Bromilow, Esq., Rainhill (gr. Mr. Morgan), staged a very interesting group of *Cypripediums*, the principal plants being *C. insigne Bohnhofianum*, *C. × Germain Opoix*, *C. × Priam*, *C. × Euryades*, *Sir Trevor Lawrence's* var., *C. × Thalia*, *Mrs. F. Wellesley*, and *C. × T. giganteum*, *C. bellatulum album*, *C. × Mercedes*, &c. (Silver Medal).

Ed. Rogerson, Esq., Oakdene, Didsbury (gr. Mr. Price), showed a very attractive group composed chiefly of *Cypripediums*. *C. × Boadicea* var. *Rosita* and *C. × Dora Crawshaw* var. *Para*, a very pretty and rosy form, both gained Awards of Merit. There were also *C. × Zeus*, *C. × Thalia giganteum*, *C. × Actæus langleyense*, *C. × Priam*, *C. × Maurice Preston* (*C. × Annie Measures × beechense*), *C. × triumphans*, and others (Silver Medal).

J. McCartney, Esq., Hey House, Bolton (gr. Mr. Holmes), gained a Bronze Medal for a group which included *Cattleya Dowiana aurea*, *C. Bowringiana*, *C. labiata alba*, *Lælia præstans*, &c. *Lælio-cattleya J. McCartney* (*Lælia præstans × Cattleya labiata*) gained an Award of Merit.

Charles Parker, Esq., Ashton-on-Ribble, staged a small group of *Cypripediums*, in which I noted *C. × W. H. Matthews*, *C. × Baron Schröder*, *C. × Maudiaë*, *C. × triumphans*, &c. (Bronze Medal).

J. H. Craven, Esq., J.P., The Beeches, Keighley (gr. Mr. Corney), showed *Cypripedium × Gaston Bultel*, *C. × keighleyense*, *C. insigne Craven's* var., &c.

J. J. Holden, Esq., Southport (gr. Mr. Johnson), showed *Cattleya labiata* var. *Amesiana* and *Cypripedium × aureum* var.

Messrs. Low & Co., Enfield, staged a fine trade group of distinction. *Cattleya labiata* var. *Louise*, a flower with white sepals and petals and a rich

crimson blotch on the lip, and C. l. Lady Duff, another albino with faint blush lip and a yellow throat, both received First-class Certificates. I noted also C. l. cœrulea, C. × Mantinii, Fowler's var., *Odontoglossum grande* Pittianum, *Cypripedium* × *fulshawense*, C. × *Actæus*, &c. (Silver Medal).

Messrs. Keeling & Sons, Westgate Hill, Bradford, staged a small group, in which I noted several good types of *Cypripedium insigne*, *Dendrobium Phalænopsis hololeucum*, *Pilumna nobilis*, &c.

Mr. J. Robson, Altrincham, gained Awards of Merit for *Cypripedium* × *Dido* and *Lælio-cattleya* × *Ariadne*. I also noted a fine hybrid *Cypripedium* from C. *Charlesworthii* × C. *insigne* Harefield Hall var., C. × *Madame Jules Hye*, C. × *Mary Beatrice* (very fine), &c.

Mr. W. Shackleton, Great Horton, Bradford, showed a small group, in which I noted *Cypripedium insigne* *Cobbianum*, C. × *Arthurianum*, C. *Fairrieanum*, &c. (Bronze Medal).

Messrs. Charlesworth & Co., Haywards Heath, Sussex, staged *Cattleya labiata Gilmourii* and C. l. *Bank House* var.

Mr. Wm. Bolton, Wilderspool, showed *Cypripedium* × *Euryades* Sir Trevor Lawrence's var., C. × *keighleyense*, and C. × *nitens magnificum*.

Mr. J. Birchenall, Alderly Edge, showed several good types of *Cypripedium Charlesworthii*, *Cochlioda rosea*, and *Trichopilia nobilis*.

At the meeting held on November 19th the plants exhibited, though slightly less in quantity, were excellent in quality, the majority of those shown having been recently certificated. Nearly sixty plants were placed before the Committee, of which the following members were present:—Messrs. E. Ashworth (Chairman), Thorp, Smith, Cowan, Ward, Warburton, Upjohn, Shill, Sander, Keeling, Cypher, Ashton, Leeman and Weathers (Secretary).

Ziba A. Ward, Esq., Northenden (gr. Mr. Weatherby), staged a graceful and varied group, which was full of interest. At the back were well-flowered plants of *Oncidium crispum* and *O. curtum*, blended with good spikes of *Odontoglossum* hybrids and species, and in the centre I noted the beautiful *O.* × *Wardiæ*, which was certificated at the previous meeting, and had kept remarkably well. There were also *Cypripedium insigne* *Sanderæ*, C. × *Leeanum giganteum*, and many others (Silver-gilt Medal).

A. Warburton, Esq., Haslingden (gr. Mr. Dalglish), staged a splendid group of *Cypripediums*, no fewer than seven gaining Awards of Merit, namely, *Cypripedium* × *Euryades*, Warburton's var., C. × *President Taft*, a flower of large proportions, C. × *Rossetti*, Warburton's var., C. × *Euryades* var. *Ruby*, C. *insigne* *Robert Scott*, C. × *Bianca*, and C. × *Sunset*. The group contained many other plants which had their previous Awards and Certificates confirmed (Silver-gilt Medal).

Samuel Gratrix, Esq., Whalley Range (gr. Mr. Shill), staged a group of *Cypripediums*, remarkable for its uniform excellence of quality and culture. *Cypripedium* × *Beryl* (*C.* × *Beekmanii* × *Mrs. William Mostyn*), a large and well-formed flower, which retains much of the shape characteristics of the last-named parent, though larger in all its parts, is a great acquisition. The dorsal sepal is slightly recurved at the base, and densely and evenly spotted on a ground colour in which pale green, yellow, and light brown seem struggling for supremacy, while the petals at the base have much the same features (First-class Certificate). *C.* × *Queen Alexandra* (*C.* × *Thompsonii* × *Charlesworthii*), having the dorsal sepal nearly white, with delicate flushings of reddish pink near the base, also gained the same award. *C. insigne* F. W. Ashton, a flower of the *Dormanianum* type, gained an Award of Merit. I noted also *C.* × *Niobe*, *Westonbirt* var., *C.* × *Chapmanii*, Gratrix's var., *C.* × *Thalia*, *West Point* var., *C.* × *T. giganteum*, *C.* × *Minos Youngii*, *C.* × *Leeanum Corona*, *C.* × *eboracum*, &c. Mrs. Mary Gratrix sent the beautiful *Cypripedium* × *Golden Glow* and *C.* × *Thalia giganteum* (Silver-gilt Medal for group).

Richard Ashworth, Esq., Ashlands, Newchurch (gr. Mr. Fletcher), staged a very bright group, which gained a Silver Medal. I noted a well-flowered plant of *Cattleya* × *Portia*, *C.* × *Clarkiæ*, *Lælio-cattleya luminosa*, *L.-c. Alcyone*, *L.-c. Pallas*, several fine sprays of *Oncidiums* and *Odontoglossums*, and many fine *Cypripediums*, one of which, *C.* × *Nancy* (*C.* × *Arthurianum pulchellum* × *C. insigne Sanderæ*), gained an Award of Merit.

J. H. Bromilow, Esq., Rainhill (gr. Mr. Morgan), gained a Silver Medal for a nice group of *Cypripediums*, *C.* × *Elmireanum splendens* being given an Award of Merit. The group included *C.* × *Thalia* Mrs. F. Wellesley, *C.* × *T. giganteum*, *C. insigne* Harefield Hall var., *C.* × *Leeanum Corona*, *C.* × *L. magnificum*, *C.* × *Actæus superbum*, *Rann Lea* var., *C.* × *Purity*, *C. bellatulum album*, *C.* × *Germain Opoix*, the beautiful *C.* × *Lord Ossulston*, &c.

John Stott, Esq., Radcliffe, staged a small group of *Cypripediums* and received a Bronze Medal. I noted *C.* × *triumphans*, *C.* × *Leeanum giganteum*, *C. Fairrieanum*, and a good plant of *Oncidium varicosum Rogersii*.

J. H. Craven, Esq., The Beeches, Keighley (gr. Mr. Corney), sent a beautiful *Cypripedium* of the yellow type, a hybrid from *insigne Sanderæ* × *aureum Surprise*, named *C.* × *The Duchess*, var. *Corneyanum*, which gained a First-class Certificate. He also sent *C.* × *Thalia giganteum* and *C.* × *T. Mrs. Francis Wellesley* (Vote of Thanks).

Ed. Rogerson, Esq., Didsbury (gr. Mr. Price), showed *Cypripedium* ×

Thalia giganteum, C. × T. Oakdene var., and C. × St. Alban, both the latter gaining Awards of Merit.

Messrs. Cypher, Cheltenham, staged a group composed of many fine *Cypripediums*. I noted C. × *Alcibiades*, C. × *Leeanum Clinkaberryanum*, C. *insigne* Harefield Hall var., C. *i. Sanderæ*, C. × *Niobe superbum*, C. × *Actæus*, Keeling's var., C. × *Madame Jules Hye*, C. × *Minos Veitchii*, &c. (Silver Medal).

Elijah Ashworth, Esq., Harefield Hall (gr. Mr. Holbrook), showed the rare *Zygopetalum* × *Ballii* with two spikes of flowers.

G. H. Peace, Esq., Monton Grange (gr. Mr. Mace), received a First-class Botanical Certificate for *Oncidium ornithorhynchum*, Monton Grange var., an albino with a faint pink tinge.

Mr. Shackleton, Gt. Horton, Bradford, was awarded a Bronze Medal for a small group, in which I noted *Cypripedium insigne* Amesiae, C. × *Arthurianum pulchellum*, and C. *Leeanum giganteum*.

Mr. Wm. Bolton, Warrington, showed a fine sample of *Cypripedium insigne* Harefield Hall var., a good C. × *Actæus langleyense*, C. × *Ville de Paris*, and a hybrid *Cymbidium* from C. *Lowianum* × *Tracyanum*, fairly intermediate in character.

Messrs. A. J. Keeling & Sons, Westgate Hill, Bradford, were awarded First-class Botanical Certificates for *Calanthe Masuca* and *Cirrhopetalum Medusæ*. I noted also *Maxillaria picta* and *Cypripedium* × *Hitchinsiae* var. *delicatum*.

Mr. J. Robson, Altrincham, sent a very good un-named hybrid from *Cypripedium* × *Hitchinsiae* × *insigne* Harefield Hall var., a good C. × *nitens*, C. × *Actæus*, C. × *triumphans*, &c.

Messrs. Charlesworth & Co., Haywards Heath, showed *Cypripedium* × *Madame Jules Hye*, and several others.

Messrs. Low & Co., Enfield, sent *Cattleya labiata Schofieldiana*, which gained a First-class Certificate. I noted also C. *Dowiana Rosita*, *Cypripedium insigne sylhetense giganteum*, C. *i. Kathleen Corsair*, and C. × *Madame Jules Hye*.

H. THORP.

CYCNOCHES MACULATUM.

AN interesting fact has just come to light respecting the striking *Cycnoches maculatum*, namely, that it grows *intmixed with* C. *chlorochilon*. At a recent meeting of the R.H.S. a *Cycnoches* in flower was exhibited by Messrs. Hugh Low & Co., under the name of C. *peruvianum*, which was thought to be producing a short spike of female buds (*supra*, p. 343). It passed into the collection of Sir Trever Lawrence, but Mr. White informs me that when the flowers expanded they proved to be ordinary C. *chlorochilon*, and it was found that the clump contained two distinct plants.

I did not see this particular plant, but a piece in pretty similar condition was presented to Kew by Messrs. Low. One stem produced a long pendulous spike, and another a short spike of four buds, and while they were small it was thought that they were females, and this sex being unknown they were naturally watched with much interest, but before opening it was seen that this would not be the case. When received the clump was seen to contain two plants, hence they were potted separately. At the R.H.S. meeting held on November 10th, and before the buds mentioned on the Kew plant had expanded, a plant called *C. peruvianum*, bearing two long pendulous racemes, was exhibited by Messrs. Charlesworth & Co., and this plant I found belonged to *C. maculatum*, Lindl. Messrs. Low shortly afterwards communicated the fact that their plants had been obtained from Venezuela with *C. chlorochilon*. It had long been known that *C. chlorochilon* and *C. maculatum* were natives of Venezuela, but the knowledge that they actually grow intermixed is I think new, and certainly interesting. How the name *C. peruvianum* became transferred to *C. maculatum* is not clear, for though the flowers of the two are very similar in colour they differ much in size, those of *C. maculatum* being much the larger. The history of the species has already been given (*O.R.*, iv. p. 228), and now we may hope that the female flowers will soon put in an appearance.

R. A. R.

NEW ORCHIDS.

A THIRTY-SECOND decade of New Orchids appears in a recent issue of the *Kew Bulletin*, eight of the species being in cultivation, as follows:—

LIPARIS RHODOCHILA, Rolfe.—A Javan species, imported by Messrs. J. W. Moore & Co., Rawdon, and exhibited by them at a meeting of the R.H.S. on August 18th last (*supra*, p. 278). It is now in the collection of Sir Trevor Lawrence, at Burford. It is allied to *L. bicolor*, J. J. Sm., and has light green flowers with a reddish crimson lip.—*Kew Bull.*, 1908, p. 412.

BULBOPHYLLUM DIXONI, Rolfe.—A native of Siam, in the mountains round Chengmai, where it was collected by Dr. Arthur Kerr. It flowered in the Trinity College Botanic Garden in February, 1908, and was sent to Kew for determination by Dr. H. H. Dixon, after whom it is named. It is allied to *B. Pechei*, Bull (*Bot. Mag.*, t. 7268), and has greenish yellow flowers, spotted with brown.—*l.c.*, p. 412.

IONE GRANDIFLORA, Rolfe.—A Burmese species, which flowered in the collection of Sir Trevor Lawrence, at Burford, in November, 1902, and afterwards at Glasnevin, whence the habitat was obtained. It is allied to *I. Andersoni*, King and Pantl., but has flowers about three times as large, and dull purple throughout.—*l.c.*, p. 413.

IONE SIAMENSIS, Rolfe.—Another of Dr. Arthur Kerr's Siamese plants,

which flowered at Trinity College Botanic Garden, Dublin, in June, 1908. It is allied to *I. scariosa*, King and Pantl., and has pale greenish flowers with some purple markings.—*l.c.*, p. 413.

CÆLOGYNE ALBO-LUTEA, Rolfe.—A North Indian species, introduced by Messrs. Sander & Sons, and flowered at St. Albans in May, 1896, and afterwards at Glasnevin. It is allied to *C. Huettneriana*, Rchb. f., and has fragrant white flowers, with some deep yellow markings on the lip.—*l.c.*, p. 414.

SCAPHYGLOTTIS ALBA, Rolfe.—A small, white-flowered species, which flowered in the Royal Botanic Gardens, Glasnevin, in May, 1908. It was obtained from Messrs. Sander & Sons, St. Albans, in October, 1905, without any record of its origin.—*l.c.*, p. 415.

MAXILLARIA PUSILLA, Rolfe.—A dwarf species, allied to *M. parahybunensis*, Cogn., imported by Messrs. Sander & Sons, with whom it flowered at St. Albans in July, 1908. The sepals and petals are brownish green, and the lip dark purple. The habitat is not recorded, but the allied species are natives of Brazil.—*l.c.*, p. 415.

SIGMATOSTALIX ELIÆ, Rolfe.—An interesting little plant, introduced by Mr. J. Birchenall, Alderley Edge, Cheshire, with whom it flowered in January, 1908, and to whose wife it is dedicated, by request. It was found growing in the Velez district, at a lower altitude than *Odontoglossum crispum*, in intermediate temperature. The flowers are yellow, spotted with reddish brown on all the parts.—*l.c.*, p. 416.

The other two species are described from dried specimens, and are *Glomera samoensis*, Rolfe, a native of Samoa, collected by Dr. B. Funk (p. 414), and *Cœlogyne Loheri*, Rolfe, a native of the Philippines, in the province of Benguet, collected by Mr. A. Loher (p. 414).

ORCHIDS FROM POTSDAM.

WE have received several very beautiful flowers from Herr C. F. Karthaus, Orchideengärtnerei, Potsdam, Germany. A very fine form of *Cattleya* × *Hardyana*, called Potsdam var., has blush pink sepals and petals, the latter darker towards the margin, and distinctly veined with white, while the lip is rich purple-crimson, with deep yellow veining on the disc, and two large yellow blotches on either side. A form of *C.* × *Octave Doin* has blush pink sepals and an undulate almost blackish-crimson lip, closely veined with deep yellow in the throat. A fine hybrid derived from *C. granulosa Schofieldiana* × *C. labiata* is a form of *C.* × *Imperator*, and has rosy purple sepals and petals, and a strongly three-lobed lip, all the lobes being purple crimson in colour, with a clear lilac, crisped margin all round, and a trace of yellow on the sides of the isthmus. A flower from a plant purchased as *Cattleya* × *Iris* × *Lælio-cattleya luminosa* is a little gem.

and if the parentage is rightly given it should be a form of L.-c. Aureole. The size and shape, however, recall L.-c. Charlesworthii rather than C. × Iris, and we suspect was one of the parents. The flower is rather over four inches across, and the sepals and petals reddish orange, while the lip is of a brilliant ruby crimson, inclining to deep rose, with some yellow veining in the throat. The other two are probably new. *Cattleya labiata* × L.-c. *bletchleyensis* has large rose-purple sepals and petals, and a richly coloured lip, most like C. labiata in general shape and marking. The other is said to be from C. Mossiæ × L.-c. Henry Greenwood, and has rosy purple sepals and petals, while the front lobe of the lip is rosy lilac, reflexed, much crisped, and has Mossiæ-like purple veining. The throat is rather open, and light yellow, with purple veining on the disc, while the margin of the side lobes is lilac. They form a very handsome group.

ORCHIDS IN SEASON.

A VERY large and beautiful form of *Cattleya labiata* is sent from the collection of Mrs. T. Fielden, Grimston Park, Tadcaster (gr. Mr. Bound). It is of excellent shape, and the sepals and petals are bright rose-purple, while the front of the lip is of the richest purple-crimson, the colour extending well back into the throat. It is suggested as closely resembling the one called C. l. Brilliant.

Several interesting Orchids are sent from the collection of J. J. Neale, Esq., of Penarth, by Mr. Hadden, including a large branching panicle of the graceful *Seraphyta multiflora*, which is said to be one of four borne by the plant. *Paphiopedilum* is represented by a twin-flowered scape of *P. callosum*, *P. insigne Ernestii*, *P. Spicerianum*, and a very dark form of *P. Fairrieanum*, and *Oncidium* by *O. varicosum Rogersii*, *O. excavatum*, *O. prætextum*, and *O. ornithorhynchum*. Of the *Epidendrum* group may be mentioned *E. nocturnum* and *E. ciliare*, with *Lælia pumila* and *L. Dayana*, and the brilliant *Sophronitis grandiflora*. Other interesting things are *Vanda cœrulea* and *V. Kimballiana*, *Dendrobium infundibulare* and *D. mutabile*, the striking *Cœlogyne barbata*, *Cochlioda vulcanica*, *Odontoglossum Lindleyanum*, *O. tripudians*, and *O. × Adrianæ*, *Zygopetalum maxillare*, *Phalænopsis amabilis*, *Bulbophyllum Careyanum*, the curious *Masdevallia muscosa*, *Platyclinis Cobbiana*, *Stenoglottis longifolia*, and the curious little West African *Polystachya Adansonii*.

Dendrobium Phalænopsis is a most useful and beautiful autumn-flowering Orchid, though in urban districts it is at times disappointing, because, like the *Calanthes* and species of *Phalænopsis*, it is rather susceptible to fog. Three nice forms are sent from the collection of J. B. H. Goodden, Esq., Manor House, West Coker, Yeovil, one of them being a pretty light form veined with purple on the lip, and tinged with the same colour on the

apex of the petals. Another has the lip wholly deep purple, with the petals of a lighter shade, while the third is somewhat intermediate between them. It is a good subject for cutting, as the flowers last well in water.

A flower of the handsome *Cattleya* × *Clarkiæ* *intensa* (bicolor × labiata), which received an Award of Merit from the R.H.S. on November 10th last, is sent from the collection of Leopold de Rothschild, Esq., Gunnersbury House, Acton, by Mr. Hudson. It is most like the former in shape, but is much enlarged, and has small auriculate side lobes to the lip. The sepals and petals are light rose-purple in colour, and the front lobe of the lip very dark crimson-purple.

An interesting inflorescence of *Odontoglossum crispum* has been sent from the collection of J. Rutherford, Esq., Beardwood, Blackburn, by Mr. Lupton, who remarks that the last time the plant flowered it was slightly spotted on the petals, but this year it has produced a spike from the top of the pseudobulb, in which the lower flower is spotted on all the segments, this one being the smallest of the lot and the last to open. The markings on the petals of this flower approach those of the Lady Jane type, and there is a similar peculiarity of structure which is absent in the other thirteen flowers. What can be the cause of this is not clear, for the column seems equally perfect in all the flowers. It will be interesting to watch the behaviour of the plant the next time it flowers, for at present it seems to be in a sportive condition, while others of the Lady Jane type retain their character.

A curious example of "dissociation" is sent from the collection of R. Ashworth, Esq., Ashlands, Newchurch, by Mr. Fletcher. It is a two-flowered inflorescence of *Lælio-cattleya luminosa* (*L. tenebrosa* × *C. Dowiana*), in which the sepals and petals of the uppermost flower are almost free from the bronzy-purple colour of the lower one, and in this respect is much more like the *Cattleya* parent. The lip is also much lighter purple. The cause of the difference is not apparent, but it will be interesting to see if the character is repeated next year.

A very pretty yellow form of *Paphiopedilum insigne* is sent from the collection of H. S. Goodson, Esq., Fairlawn, Putney, by Mr. Day, which seems to be entirely without the small brown spots seen in *P. insigne Sanderæ*. It is said to have come out of a batch of imported plants. Two good flowers of the handsome *Cymbidium Tracyanum* are also sent, one of which is much darker than the other.

A fine flower of *Cattleya Harrisoniana* is sent from the Nursery of Mr. W. Brooks, of Weston-super-Mare, in which the lip is unusually well crisped.

A very pretty form of *Paphiopedilum Charlesworthii* is sent from the collection of H. Gurney-Aggs, Esq., Pippbrook, Dorking, by Mr. Gill.

The dorsal sepal is reticulated with very bright rose, leaving a mottling of white, while the lower sepal is much enlarged, and broadly margined with the same colour as the dorsal sepal, a very unusual character. A flower of the rare *Cattleya Walkeriana* is also sent.

NOTES.

Two meetings of the Royal Horticultural Society will be held at the Royal Horticultural Hall, Vincent Square, Westminster, during December, on the 8th and 22nd, when the Orchid Committee will meet at the usual hour, 12 o'clock noon.

The Manchester and North of England Orchid Society will hold meetings at the Coal Exchange, Manchester, on December 3rd and 17th. The Orchid Committee meets at noon, and the exhibits are open to inspection from 1 to 4 p.m.

The November issue of the *Gardeners' Chronicle* of America announces the following awards made to Orchids at the "fall" exhibition of the Horticultural Society of New York:—"Lager & Hurrell won 1st for collection of Orchids not less than 25 species, winning over Julius Roehrs Company, who was 1st over that firm at the American Institute last week. In the Orchid class of novelties not before exhibited, Joseph Manda, of West Orange, N.J., obtained 1st prize. In the Orchid class (cut bloom), Julius Roehrs Company took 1st prize. In Orchids grown by amateurs, Mrs. R. B. Tuttle, M. J. Pope, gardener, took 1st prize. In the class of one Hybrid Orchid, Mr. Clement Moore, of Hackensack, Edgar Knight, gardener, won 1st prize."

Hybrids of unrecorded parentage are becoming unduly numerous. Many such have recently been submitted to us for determination, and in a good number of cases there is reason to suspect that the parents are themselves of hybrid origin, and it is often impossible to say what they have been derived from, and consequently what they ought to be called. We would urge that greater care should be taken to preserve careful records of parentage.

Photographs of interesting novelties or subjects of interest suitable for reproduction in our pages are invited. Good strong prints, showing plenty of detail, and on smooth or glossy paper, are the most suitable for reproduction by the half-tone process.

THE ORCHID STUD-BOOK.—We are pleased to report that the printing of the Addenda and Index to this work are completed, and the last pages of the Introduction are passing through the press. The work will be placed in the binder's hands immediately, and full particulars will appear in our next issue.

ORCHID PORTRAITS.

CATTLEYA LODDIGESII (monstrous).—*Rev. Hort. Belge*, 1908, p. 308, with fig.

CYPRIPEDIUM CHARLESWORTHII BROMILOWIANUM.—*Journ. Hort.*, 1908, ii. p. 469, with fig.

EPIDENDRUM FALCATUM (PARKINSONIANUM).—*Gard. Chron.*, 1908, ii. p. 378, with suppl. fig.

LÆLIO-CATTLEYA ROSALIND.—*Journ. Hort.*, 1908, ii. p. 515, with fig.

ODONTIODA CHARLESWORTHII, GOODSON'S VAR.—*Garden*, 1908, ii. p. 586, with fig.

SOPHROCATTLEYA DORIS.—*Journ. Hort.*, 1908, ii. p. 493, with fig.

VANDA CÆRULEA CHARLESWORTHII.—*Gard. Chron.*, 1908, ii. p. 374, fig. 160; *Journ. Hort.*, 1908, ii. p. 445, with fig.; *Gard. Mag.*, 1908, p. 831, with fig.

ANSWERS TO CORRESPONDENTS.

[Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An ADDRESSED postcard must be sent if a reply by post is desired (abroad, reply postcards should be used). Subjects of special interest will be dealt with in the body of the work].

W.M.A. The flower sent is probably a form of *Cattleya* × *Mantini*, though the yellow veining is less developed than usual. There is no doubt of the presence of *C. Bowringiana* in it, and only *C. Dowiana* and *C. × Hardyana* among those mentioned would give such a hybrid.

C.B., Paris. We will examine and report.

G.W. We know that both the figures were prepared from the same certificated flower (there was but one), but one was from a photograph, the other from a drawing, and the latter is far from accurate.

O.O.W. Next month.

A.E.B. The imported *Odontoglossum crispum* flower is certainly very pretty, and one cannot foresee what such a tiny plant may develop into. It should be taken care of.

J.C.H. The Calabash tree, *Crescentia Cujete*, L. seems to be a favourite with Orchids for at t. 3430 of the *Botanical Magazine* (where it is figured) we read that "branches of it are not unfrequently sent over to our collections from the West India Islands, for the sake of the epiphytes with which they are invested."

J.R. A very pretty light-coloured form of *Paphiopedilum* × *Lawrebel*.

Photographs received, with thanks. E.D., Ch. & Co.

F.H.S. Received with thanks, but the report must be deferred until next month.

W.G. We fail to identify the flower in the absence of parentage.

Several notes are unavoidably postponed owing to pressure on our space by the annual Index, the preparation of which is invariably a very heavy matter. If anything has been overlooked we hope to rectify it next month.

INDEX.

- ACINETA** densa, 311.
Ada aurantiaca, 138.
Aërides Vandarum, 170.
Aggeianthus marchantioides, 8.
Albinism, 58, 61, 229, 230; Inheritance of, 58, 102, 142, 228, 265, 336; and Mendel's Laws, 58.
Angræcum Augusti, 246; **Buyssoni**, 11; **Eichlerianum**, 133; **Germinyanum**, 171; **hyaloides**, 137; × **primulinum**, 138; **sesquipedale**, 133.
Anguloa eburnea, flesh-coloured, 184.
Angulocaste ×, 82; **Bievreana**, 92, 93.
Answers to Correspondents, 32, 64, 96, 128, 160, 192, 224, 256, 288, 320, 352, 376.
Ants fertilising Javan Orchids, 37; method of catching, 163.
Arachnanthe annamensis, 238; **Cathcartii**, 5; **Arachnanthe Rohaniana**, 264.
BEES fertilising Javan Orchids, 37.
Bifrenaria tetragona, 205.
Bletia coccinea, 248.
Blinds, lath roller, 83, 268; **Manchester shading**, 356.
Bollea Lalindei, 144; **L. aurea**, 247; **L. pallida**, 247.
Bonatea antennifera, 100.
Book, Review of, Oakes Ames, *Orchidaceæ, Illustrations and Studies*, 109.
Bound, Mr. W. P., 288.
Brassavola Digbyana as a parent, 356.
Brassocatlaelia ×, 82, 83, 352.
Brassocattleya × **Bradshawiæ**, 143; **Dante**, 341, 348, 356; **heatonensis**, **Westonbirt var.**, 172; **Helen Maron**, 118; **Hippodamia**, 182; **Lindleyana**, 119; **Madame Charles Maron**, **Sander's var.**, 307; **Madame Hye superba**, 341; **Peetersiæ**, 148, 150; **Queen Alexandra**, **Glenthorne var.**, 343; **Reneiæ**, 148; **Siren**, 14; **Sirius**, 153, **St. Alban**, 309.
Brassoepidendrum ×, 82, 83.
Brassolælia × **Cecilia**, 342, 348.
Bromheadia Findlaysoniana, 200; **palustris**, 200.
Bulbophyllum barbigerum, 215, 345; **Careyanum**, 366; **cupreum**, 362; **Dixoni**, 371; **fusco-purpureum**, 204; **inflatum**, 238; **lemniscatoides**, 292; **lilacinum**, 362; **mirum**, 180, 190; **orthoglossum**, 203.
CALANTHE × **Angela**, 342; **Ceciliæ**, 306.
Calanthes, 108, 294, 300, 332.
Calendar of Operations, 17, 50, 83, 106, 134, 166, 210, 234, 268, 299, 330, 358.
Catasetum, 217, (sexes of) 217; (with three female flowers), 182; **barbatum spinosum**, 253; **Claesianum**, 276; **discolor**, 221; **fimbriatum**, 283, 335; **Imschootianum**, 306, 319; **labiatum**, 276; **lanciferum**, 252; **maculatum**, 310; **Russellianum**, 306; **spinosum**, 252.
Cattleya × **Adula**, 308; × **Aliciæ**, 311, 344; × **Angela**, 308; × **Appletoni**, 333; × **Arethusa**, 364; **bicolor**, 21; (× **Loddigesii**), 21; **Bowringiana**, 337, 339, (× **L.-c. Haroldiana**), 311; × **Browniæ**, 293; **citrina** (× **Lælia cinnabarina**, 187; × **Claesiana**, 287, 295; × **Clarkiæ intensa**, 362, 374; × **conspicua**, 339; × **Cyril**, 71; × **Duchess**, 369; × **Dupreana**, 245; **elongata**, 295; × **Enid**, **Westonbirt var.**, 119; × **Fabia**, 89, 327; × **F. Cooksonæ**, 362; × **F. Vigeriana**, 89; × **Freya**, 348; × **fulvescens**, 339; × **Harold var. Hildegard**, 275; **Harrisonæ**, 21; **Harrisoniana** (× **L.-c. Charlesworthii**, 357; × **L.-c. luminosa**), 356; **H. alba Stanley's var.**, 309; × **Imperator**, 31, 32, 62, 372; × **Iris**, 206, (× **Lælio-cattleya Cappei**), 340; **labiata (abnormal)**, 350, **albinos reverting**, 336, 342, (culture of), 281, (× **L.-c. bletchleyensis**), 373; **L. polychilos**, 95; **L. Roehrsiana**, 281, 282; **Loddigesii**, 21, (double), 154; **Lueddemanniana**, 116; **L. alba**, 201; × **Mdlle. Marie Henriette de Wavrin**, 98; × **Maroni aurea**, 308; **maxima** (× **Lælia pumila**, 284; **Mendelii His Majesty**, 181; **M. Princess**, 223; × **Miss Williams**, 311; × **Mont Blanc**, 124; **Mossiæ** × **resplendens**, 150; × **L. flava**, 148, (× **L.-c. Henry Greenwood**, 273; **M. Goossensiana**, 171; **M. Le Président**, 183; **M. Reineckeana** (× **Brassavola Digbyana**), 266, 268; **M. Wageneri**, 205; × **O'Brieniana**, 231, 351; × **Octave Doin**, 94; × **Orion**, 244; × **parisiensis**, 117; × **Parthenia** (× **labiata**, 363; × **P. nobilissima** (× **Hardyana alba**, 195; **Percivaliana** (× **Lælio-cattleya intermedio-flava**, 187; × **Queen of Spain**, 365; × **Rhoda**, 307; × **Rosa Leeman**, 260; × **Rutilant**, 312; **Schrøderæ** × **Lælia Cowanii**, 148; **S. Queen Alexandra**, 140; **S. The Baron**, 140; × **Semiramis**, 247; **Skinneri** (× **Lælia tenebrosa**, 150; **speciosissima Sanderiana**, 202; × **Suzanne Hye de Crom**, 116, 119, 138, 151; × **Tacitus**, 277; **Trianæ**, 85, (× **L. Cowanii**), 118, (× **Lælio-cattleya Phœbe**), 75; **T. delicata**, 62; × **Undine**, 123; **velutina**, 21, 295, (× **bicolor**), 21, (× **Harrisonæ**), 21; × **Venus**, 310, 318;

- Cattleya*—
 × *Victory*, 313; × *Vigeriana*, 89; *Warscewiczii*, 246; *W. Frau Melanie Beyrodt*, 246; × *Wavriniana*, 98.
Cattleya pollen, 66.
Cattleya × *Sophrocattleya*, 40.
Cattleyas, 235, 271, 300, 330; *Brazilian*, 21; *hybrid*, 85.
Chondropetalum ×, 82; *Fletcheri*, 56, 66, 364, 365.
Chondrorhyncha Chestertoni, 57.
Chytroglossa Marileoniæ, 159.
Cirrhopetalum Andersoni, 310; *biflorum*, 36; *fascinator*, 155; *Makoyanum*, 11; *papillosum*, 155; *pulchrum*, 180; *retusiusculum*, 14; *Roxburghii*, 170; *Wendlandianum*, 170.
Cochlioda Noetzliana (× *O. crispum*), 294 (× *O. c. Cooksonæ*) 196, (× *O. × Lambeauianum*), 196.
Cockroaches, 271, 301.
Cœlogyne albo-lutea, 372; *barbata*, 364; *cristata*, 85; *fuliginosa*, 366; *Loheri*, 372; *Massangeana*, 211; *Mooreana*, 329; *pandurata*, 211, 294; *triplicatula*, 239; *virescens*, 155.
Coryanthes, 216; *macrantha*, 90, 216; *splendens*, 274.
Cryptochilus Meirax, 7; *reticulatus*, 8.
Cycnoches Egertonianum, 59, 218, 296, 297; *maculatum*, 363, 370; *peruvianum*, 343, 344, 345, 370, 371; *ventricosum*, 218, (and *Egertonianum* intermixed), 298, 321; *Warscewiczii*, 218.
Cycnoches, 218, 253; *sections of*, 218, 298, 299.
Cymbidium Dayanum, 339; × *eburneo-Lowianum*, 325, 326; *eburneum Goodsonianum*, 140; × *gatonense*, 71; *grandiflorum*, 326; *insigne Glebelands var.*, 93; *i. superbum*, 117; *i. splendens*, 117; × *Lady Colman*, 74; *lancifolium*, 306; *Lowianum* (× *Tracyanum*), 326, 370; *Sanderi*, 124.
Cymbidiums, 166, 326.
Cynorchis, 112; × *kewensis*, 112; *Lowiana*, 112; *purpurascens*, 310.
Cypripedes from Bridge Hall, Bury, 19, 53.
Cypripedium, 91, 92; × *Armstrongiæ*, 15; × *Ashburtonæ* (× *Lawreanum*), 20; × *Aureole*, 72, 76; *bellatulum*, 214; *b. Exhims var.*, 140; × *Bellerophon*, 42; × *Berkeleyanum*, 139; × *Beryl*, 14, 369; × *Bianca*, 71, 323, 328; × *B. superbum*, 310; × *Braceyanum*, 118; × *Britannia*, 144; *callosum Sanderæ* (× *bellatulum album*), 12, 58, 170; *Chamberlainianum* (× *Godefroyæ*), 333; × *Charles Canham* (× *Fairrieianum*), 195; *Charlesworthii* (albinism of), 347; *C. albens*, 12; *C. album*, 347; *C. Bromilowiæ*, 344; *C. Bromilowianum*, 333, 347; *C. chard Moore*, 214, 299; × *Cynthia*, 323; × *Dante magnificum*, 362; × *Dreadnought*, 365; *Druryi* (× *Charlesworthii*), 345; × *Earl Egerton*, 47; × *Eclipse*, 309; × *Erato*, 62; × *Ernest Reed*, 10; × *Eury-nitens*, 77; × *exquisitum*, 122; × *exultans*, 20; *Fairrieianum*, 199, 328, (crosses of), 326; *F. Black Prince*, 15; *F. Cookson's var.* 71; *F. nigrum*, 75; *F. Othello*, 214, 215; × *F. Sander*, 71; × *Garret A. Hobart*, 53; × *Gaston Bultel*, 354; × *G. B. var. King Edward*, 16; × *George Singer*, 47; × *Germaine Opoix*, 354; × *Germinyanum* (× *Alcibiades*), 324; × *Hannibal*, 323; × *Hecla II.*, 73; × *Helen II.*, 72, 104, 118; × *H. II. var. Armstrongiæ*, 72, 118; × *H. II. Westonbirt var.*, 138; × *Hera incomparibile*, 20; 20; *hirsutissimum* (× *M. de Curte*), 42; *insigne*, 20, 50, 51, 328, (× *exul*), 62, (× *Sir Redvers Buller*), 76; *i. Chantini Lindeni* (× *i. montanum aureum*), 324; *i. Dorothy* (× *i. Sanderæ*), 334, 335, 336; *i. Gwynedd*, 14; *i. Harefield Hall var.*, 328, (self-fertilised), 324; *i. Madame le Doux*, 31; *i. Sanderæ*, 109, 266, 267, (*Oakwood raised*), 16, (× *aureum Surprise*), 195, (× *C. callosum Sanderæ*), 12, 58, (× *Leeanum*), 12, (× *Maudiaæ*), 195, 265, (× *San-Actæus*), 12; *i. Sanderianum*, 109, 266, 267, (× *Maudiaæ*), 265; × *Io grande* (× *three different sorts of pollen*), 191; × *Io-Charlesworthii*, 308; × *J. Seymour*, 75; × *Julia* (× *bellatulum*), 333; × *Lawre-callosum*, 46; × *Leeanum* (× *Baron Schröder*), 344; × *L. var. J. G. Fowler*, 259; × *Leonæ*, 12; × *Lily Blanche*, 11; × *Lord Ossulston*, *Sander's var.*, 339; × *Lorna*, 14; *macranthum*, 184, 186; *m. album*, 224; *m. ventricosum*, 186; × *Madame Alfred Bleu* (× *Fairrieianum*), 195; × *Marguerite*, 76; *Mastersianum* (× *Sallieri*), 53; × *Maudiaæ*, 58, 266, 284; × *Maurice Preston*, 367; × *memoria Moensii* (× *Charlesworthii*), 53; × *Merlin*, 71; × *Milo Westonbirt var.* (× *Sallieri aureum*), 323; × *Minos Youngii*, 44; × *Mona*, 47; × *Mons. de Curte* (× *Argus*, 53; *montanum*, 92; × *Moonbeam*, 38, 42; × *Mr. F. Sander*, 353, 354; × *Mr. J. E. Shill*, 78; × *Mrs. Bostock*, 72; × *Mrs. Tautz* (× *hirsutissimum*), 364; × *Mrs. William Mostyn*, 74; × *Nancy*, 369; × *Niobe*, 326; × *nitens Wrigleyanum*, 20; × *niveo-callosum Cookson's var.*, 10; × *œnanthum superbum* (× *M. de Curte*), 323; × *Orion var. aureum*, 117; × *Patrocinii*, 275; × *Priceanum*, 313; × *Queen Alexandra*, 369; × *Rajah*, 71; × *Richmanii*, 328; × *Rolfei*, 194; × *Rossetti*, 265, 277, 308, 314, 324, 328; *Rothschildianum*, *Northaw var.*, 203; × *Rufus*, 12; × *Sallie*, 77; × *Sanacderæ*, 16; × *S. superbum*, 10; × *San Actæus*, 12; × *S. etoniense*, 365; × *Shakespeare*, 12; × *Sir Redvers Buller*, 333; *Spiceri*—

- Cypripedium*—
anum, 364 ; *×* *Spiceroni*, 77 ; *×* *St. Mary*, 316 ; *×* *St. Vincent*, 45 ; *×* *Sultan*, 38, 43 ; *×* *Thalia v. Mrs. Francis Wellesley*, 273 ; *Thunbergii*, 186, 187 ; *×* *Triumph*, 48 ; *×* *triumphans*, 53 ; *×* *Troilus Cravenianum*, 42 ; *ventricosum*, 185, 186 ; *Victoria-Mariæ* (*×* *insigne Sanderæ*), 118 ; *villosum* (*×* *Crossianum*), 194 ; *×* *Yellow Prince*, 124.
- Cypripediums*, 50, 86, 235, 271, 299, 330, 358 ; *bellatulum* group, 51, 135, 359 ; An Ideal list, 353 ; Seedling, 5, 51, 323 ; The twenty best hybrid, 353.
- Cyrtopodium punctatum*, 139.
- DARWIN, Origin of Species, 225.
- Darwin-Wallace Jubilee Celebration, 225.
- Darwin-Wallace Medal, 225.
- Dendrobium* *×* *Alice Bound*, 294 ; *×* *A. B. var. giganteum*, 143 ; *angulatum*, 292, 294 ; *atroviolaceum*, 69 ; *Bensonæ*, 68 ; *bicaudatum*, 294 ; *Bronckhartii*, 149 ; *Brymerianum*, 24 ; *B. Gatton Park var.*, 141 ; *B. histrionicum*, 24 ; *×* *chessingtonense*, *Gatton Park var.*, 115 ; *Cœlogyne maxima*, 343 ; *criniferum*, 254, 255 ; *crumenatum*, 255 ; *cucumerinum*, 70, 292 ; *×* *Cybele*, *Gatton Park var.*, 115 ; *cymbidioides*, 239 ; *delicatum*, 88, 112 ; *×* *Euterpe var. Olive*, 156 ; *fimbriatum oculatum*, 141 ; *fugax*, 254 ; *fusiforme*, 120 ; *×* *Geo. Woodhams*, 143 ; *Guibertianum*, 198 ; *Harveyanum*, 25 ; *Hildebrandii*, 26 ; *Jerdonianum*, 204 ; *Kingianum*, 88 ; *K. album*, 88, 127 ; *K. pallidum*, 88 ; *linguiforme*, 70 ; *×* *Mrs. Alfred Rogers*, 115 ; *nobile*, 66, 67 ; *n. album*, 135 ; *n. Ballianum* (*×* *n. murrhiniacum*), 121 ; *n. virginale*, 143 ; *n. v. magnificum*, 143 ; *×* *Ophir*, 110 ; *×* *Perseus*, 115 ; *Phalaenopsis*, 146, 373 ; *×* *Psyche*, 115 ; *×* *Rallianum*, 173 ; *regium* (seedlings of), 294 ; *×* *Snowflake*, 294 ; *speciosum*, 88, (*×* *Kingianum*), 112 ; *×* *Thwaitesiæ*, *Bound's var.*, 139 ; *thyrsiflorum*, 23 ; *triflorum*, 239 ; *×* *Waltoni*, 93 ; *Wardianum*, 359 ; *W. Fowlerianum*, 260 ; *×* *Wiganianum* (*×* *Linawianum*), 119.
- Dendrobiums*, 23, 28, 66, 108, 135, 167, 301 ; Hybrid (Dominance and Reversion in), 121 ; Seedling, 301, 359 ; yellow flowered, 25.
- Dendrophylax*, 133.
- Desmotrichum*, 254, 255.
- Diacattleya* *×*, 83 ; *Colmanianæ*, 80, 115.
- Diacrium* (*×* *Cattleya*), 95 ; *bicornutum*, 82 ; (*×* *Cattleya*), 40.
- Diacrocattleya* *×*, 82 ; *Colmanianæ*, 74.
- Dies Orchidiani*, 33, 65, 129, 261.
- Dialælia* *×*, 82, 83.
- Dichæa species*, 334.
- Disa longicornu*, 165.
- Diurideæ*, 100
- Diurus longifolia*, 39.
- EPICATTLEYA* *×* *Gaskello-costaricensis*, 276 ; *Pearl*, 317.
- Epidendreæ*, 131.
- Epidendrum confusum*, 189 ; *costatum*, 246, 251 ; *evectum* (white), 120 ; *fragrans var. megalanthum*, 189 ; *Lambeauianum*, 276 ; *leucochilum*, 171 ; *nocturnum*, 32 ; *Pentotis*, 189 ; *vesicatum*, 238 ; *virens*, 204 ; *Wallisii*, 293.
- Epidendrums*, 260.
- Epidiacrium* *×* *Colmanii*, 115, 119.
- Epipactis gigantea*, 220.
- Epiphronitis* *×* *Brassocatlaelia*, 83.
- Epipogon Gmelinii*, 99.
- Epivola*, 83.
- Eria amica*, 171 ; *Elwesii*, 7 ; *longispica*, 276 ; *Meirax*, 7 ; *Parishii*, 8 ; *reticulata*, 8 ; *ustulata*, 8.
- Eulophia nuda*, 204.
- Eulophiella Peetersiana*, 87, 238.
- Events of 1907, 1.
- Evolution, 59, 60, 219, 289, 290, 291 ; acquired characters, 291 ; alternative inheritance, 60 ; doctrine of Evolution, 289, 291 ; Heredity and evolution, 59 ; Mendelian theory of (see under Mendelian) ; mnemonic theory of, 290, 291 ; mutations, 61 ; Morphological, 289, 290 ; natural selection, 60, 219, 291 ; Ontogeny, 289, 291 ; Phylogeny, 291 ; reaction to environment, 290 ; somatic inheritance, 291 ; survival of the fittest, 60 ; Weismannism, 291.
- FOG FIEND, 63.
- Fungi and Orchid roots, 12, 154.
- Gardeners' Chronicle*, 223.
- Ghent—
 Quinquennial Show at, 126, 129, 147, 167.
- Geodorum pacifeum*, 155 ; *purpureum*, 246.
- Glomera samoensis*, 372.
- Govenia lagenophora*, 316 ; *utriculata*, 316, 317.
- HABENARIA carnea*, 304, 505 ; *geniculata*, 310.
- Heredity, 61, 105 ; ancestral tendencies, 105.
- Hybridisation a question of biological importance, 228 ; records of, 264.
- Hybridising, 236 ; with mixed pollen, 33, 97, 141, 142, 191 ; with stored pollen, 35, 65, 111, 112.
- Hybrids, bigeneric, 82, 95 ; colour reversions in, 142 ; dissociation of specific characters in, 59, 229, 374 ; false, 57 ; generic (list of), 82 ; multigeneric, 340 ; natural, 228 ; of 1907, 2 ; reversion in, 220, 229, 324 ; self-fertilised, 324 ; spontaneous, 228 ; two from same capsule, 97.

INSECTICIDES, 330.

Insect pests, 27.

Ione grandiflora, 371; *siamensis*, 371.

LABELS, lead, 323.

Lælia × *Adrienne*, 31, 62, 98; *anceps*, 107, 259, 293, 326, 332, (× *autumnalis*), 356, (× *Dayana*), 356, (× *L.-c. Charlesworthii*), 292; × *Bella*, 246; × *cinna-brosa* (× *tenebrosa*), 294; *Cowanii*, 97, 142, (× *anceps Dawsoni*), 293; *crispa*, 21; × *De Geestiana*, 98; *Gouldiana*, 356; *grandiflora*, 284; × *Groganii*, 125; *Jongheana*, 127; *monophylla*, 293; *præstans* (× *L.-c. callistoglossa*), 176; *purpurata*, 166, (× *Cattleya Percivaliana*), 112; × *Rogersii*, 248, 264.

Lælio-cattleya × *Adolphus* (× *Cattleya Harrisoniana*), 362; *Aladdin*, 115; *Arbaces*, 115; *Ariel*, 115; *Aureole*, 373; *Bedouin*, 180; *Berthe Fournier* var. *tigrina*, 14; *Cappei* (× *C. Warscewiczii*), 141, (× *C. gigas*), 97; *Chloe*, 307; *Clive magnifica*, 243; *Cornelia Westonbirt* var., 338; *Corunna*, 43; *Daftodil*, 118; *Dorothy*, 115; *Dorothy Strachan*, 338; *elegans*, 324, (× *B. Digbyana*), 195; *Elinor*, 120, 150; *Elva* var. *St. Vincent*, 306; *E. Westonbirt* var., 180; *Fantasia*, 182; *Fowleri*, 260; *Gertrude*, 10; *Golden Oriole*, *Goodson's* var. 310; *Goldfinch*, 71, 115; *Gotthard*, 344; *Gottoiana*, 62; *Heatherwood*, 363; *Mrs. G. Hamilton-Smith*, 188; *Isaacii*, 64; *Isaacsii*, 29, 64; *J. McCartney*, 367; *Lambeauia*, 307; *luminosa*, 374; *l. Westonbirt* var., 119; *Lustre gigantea*, 341; × *Minnie*, 14; *Mrs. Hood*, 342; × *Oliveri*, 187; *Ophir*, 33; × *Ortrude*, 327; × *O. superba*, 341; *Phœbus*, 363; *Phryne*, 33; *Pizarro*, 115; *præstoglossa*, 345; *Remula*, 334; *St. Gothard*, 338; *stellata*, 254; *Sylvia*, 74; *Vesta*, 306; *Wavrinii*, 98.

Lælio-cattleyas, 85.

Lichenora Jerdoniana, 8.

Liparis, 272, 278; *atrosanguinea*, 272; *rhodochila*, 371; *tabularis*, 155, 272; *Warpuri*, 155.

Lissochilus giganteus, 292, 318.

Listrostachys forcipata, 276; *Kindtiana*, 276; *Whytei*, 275.

Lycaste Skinneri at Bury, 113; *S. alba*, 113; *S. Rainbow*, 114; *S. Orion*, 73; *tricolor albens*, 275.

MANCHESTER AND NORTH OF ENGLAND ORCHID SOCIETY, 15, 45, 76, 121, 142, 174, 205, 278, 312, 344, 366; awards of, 175.

Masdevallia coccinea, 253; *muscosa*, 215; *Ortgesiana*, 342; *Schroederiana*, 141; *tovarensis*, 240.

Masdevallias, 239, 240.

Maxillaria luteo-alba, 116; *phœnicanthera*, 363; *pusilla*, 372.

Megaclinium colubrinum, 339; *velutinum*, 171.

Mendel's Law and Albinism, 95; blended inheritance, 60; Dominant characters, 60, 121; Reversion, 121; Unit-characters, 58, 59.

Mendelian characters, 59, 60; Inheritance, 58, 103; "Laws" of inheritance, 58; pairs, 59; prediction, 230.

Mendelism, 59; as a law of heredity, 61.

Miltonia × *Bleuana Stevensii*, 202; *cuneata*, 84; × *Hyeana*, 181; *Roezii*, 84, 249, (habitat of), 250, 251; *spectabilis Moreliana* (× *O. crispum*), 163; × *St. Andre*, 198, 202; *vexillaria*, 84, 179, 221, 319, (double), 221; v. *Constance Wigan*, 179; v. *Westonbirt* var., 9; *Warscewiczii* (× *Odontoglossum crispum*), 349, (× *O. c. Franz Masereel*), 195, (× *O. × Lambeauianum*), 195.

Miltonia seedlings, 164.

Monandrea, 99.

Monolepsis, 57.

NAMES (latinising), 352.

Neottia, 100.

Neuwiedia Lindleyi, 91.

New York Horticultural Society, 375.

Nomenclature, 320; of generic hybrids, 82; of hybrid Orchids, 95, 340; of multigeneric hybrids, 351.

OBITUARY, Marquis de Wavrin, 98.

Odontioda × *Charlesworthii*, 182, 185, 243; *C. Goodson's* var., 310; *Craveniana*, 33, 41, 43; *Devossiana*, 33, 41, 93, 151; *Lutetia*, 117, 125; *St. Fuscien*, 181, 185; *Thwaitesii*, 246, 247; *Vuylstekeæ*, 245; *wickhamiensis*, 203, 204.

Odontoglossum × *Adrianæ*, 162, 188 (× *triumphans*), 197; × *Adrianæ* var. *Lady Wantage*, 119; × *amabile* (× *ardentissimum*), 143, (× *Rolfeæ*), 139; × *amœnum*, 189; × *Andalusia*, 139; × *Andersonianum*, *Westonbirt* var., 357; × *Andinella*, 185; × *ardentissimum* (× *Hunnewellianum*), 197; × *a. album*, 143; × *a. Emperor of India*, 151; × *a. memoria Lambeauia*, 151; × *a. virginale*, 123; × *a. xanthotes*, 11, 120; × *Arlequin*, 151, 158; × *armainvillierense*, 287; × *a. Peetersii*, 110; × *a. Rajah*, 188; × *a. xanthotes*, 243; *aspidorhinum*, 276; × *Astarte*, 139; × *Beaute-Cœleste*, 153; × *Bingelianum*, 43; *brevifolium* (× *crispum*), 196; × *Carmania*, 178; × *C. rosefieldense*, 311; × *Carmen*, 120; × *Chapmania*, 116; *cirrhum* (× *ardentissimum*), 164, 179;

Odontoglossum—

citrosum, 211, (× *Cochlioda*), 40; × *Clytie*, 117, 125; × *Coradinei* (× *crispum*), 222; × *C. Crawshayanum*, 127; × *C. Thompson's var.*, 177; *coronarium*, 40; × *crispodinei*, 202; × *crispo-Harryanum*, 357; × *c.-H. Gatton Park var.*, 254; *crispum*, 4, 72, 161, 179, 188, 220; 258, 301, (blotched forms of), 220, 227, (× *ardentissimum*), 164, (habitat of), 30, (hybrids), 227, (Pacho and Velez types), 161, (popularity of), 228, (reversion of), 374, (secondary hybrids of), 227, (with its varieties and hybrids), 226; *c. Fairlawn*, 188; *c. H. S. Goodson*, 188; *c. Jean Linden*, 73; *c. Kenneth*, 181, *c. Lehmanni*, 227; *c. Leonard Perfect*, 172; *c. lilacinum* (× *Ruckerianum*), 196; *c. Mariæ* (× *O. c. Lucianii*), 196; *c. Marjorie*, 180; *c. Princess of Wales*, 204; *c. Queen-Empress*, 322; *c. Queen of the Earth*, 170, 232, 233; *c. St. Alban*, 116; *c. Westonbirt var.*, 357; *c. xanthotes*, 5; *crocidipterum*, 295; *Edwardii* (× *C. Noetzeliana*), 162, (× *nobile*), 294; × *egregium Madame Jules Hye de Crom*, 153, 209; × *Elaine*, 278; × *Eleanor*, 125, 182; × *E. Westonbirt var.*, 243; × *Electra*, 120; × *Ernestii*, 157, 189; × *Ethiopica*, 144; × *eximium Aglaon*, 153; × *e. Centenary*, 188; × *e. Queen Alexandra*, 184; × *exultans*, 73; × *Fascinator*, 188, 196, 227; × *gandavense cœruleum*, 153; × *gemmaum*, 158; × *Gladys*, 120; × *G. May Blossom*, 181; *gloriosum*, 162; *g. citrinum*, 203; *grande*, 210, (as a parent), 349; × *Groganiæ*, 364; *Hallii nigrum*, 177, 178; × *Hallio-crispum* (× *O. triumphans*), 204; × *Harryano-crispum* (× *Adrianæ*), 182; × *harvengtense*, 157; × *Hiawatha*, 158; × *hibernicum*, 182, 186; × *His Majesty*, 143; *Hunnewellianum*, 162; × *illustre*, 209; × *i. King of England*, 243; × *i. luxurians*, 184; × *i. Theodora*, 173; × *John Clarke*, 10; × *Judith*, 139; × *Lambeauianum*, 195; × *laudatum*, 184; × *Leo*, 204; *Lindeni*, 180; × *loochristiense*, 115, 164; × *Lucasianum*, 178; × *L. Thompsoni*, 178; *luteopurpureum*, 30, 162; × *maculatissimum*, 130, 153, 169; × *McNabianum*, 44; × *mirum*, 286; *nævium*, 171; *nebulosum Mossiæ*, 173; × *Nerissa*, 185; × *nethernense*, 158; × *Notteanum*, 73, 148; × *Ossulstoni*, *Glebelands var.*, 171; × *Othello*, *Golden Gem*, 181; × *O. Westonbirt var.*, 243; × *percultum* (× *crispum*), 78; × *p. J. R. Roberts*, 139; *Pescatorei* (× *ardentissimum*), 164; *P. album*, 157; *P. Sanderæ*, 339; × *Phœbe*, 202; *platychilum*, 163; *p. superbum*, 170; × *Queen Alexandra*, *v. Crawshayanum*, 202; *ramosissimum* (× *crispum*), 163; × *Rolfeæ*, 164, (× *ardentissimum*), 164, (× *crispum*), 287; × *R. roseum* (× *c. Starlight*), 141; *Rossii*, 349, (as a parent), 349, (hybrids of), 349;

Odontoglossum—

Roezlii, 250; × *Terpsichore*, 157; × *Tristam*, 222; *triumphans* (× *polyxanthum*), 196; *Thwaitesii*, 275; *Uio-Skinneri* (as a parent), 349, (× *Cochlioda*), 40; × *Wardiae*, 366; × *Wardii*, 277; × *waltonense*, 44; × *Wiganianum superbum*, 276; × *Wilckeanum*, 30, × *Adrianæ*, 119, × *ardentissimum*, 73; × *W. Schröderianum*, 171; × *W. venerandum*, 31; × *Zena*, 277; × *Zenobia*, 277.

Odontoglossum seedling with four breaks, 294.

Odontoglossums, 2, 34, 48, 108, 134, 163, 234; at *St. Gilles*, 195; at *Loochristi*, 163; from *Walton Grange*, 286; from *Loochristi*, 153; hybrid, 129, 208, (from *Bogota*), 227; *Hybridising*, 348; insect which fertilises, 208; *Malformed*, 221; seedlings, 5, 162, 164, 196; *Trio of*, 48.

Odontonia × *Lairesseæ*, 198, 349.

Oncidium altissimum, 95; *bicallosum*, 163; *crispum* (× *Cochlioda*), 40; *incurvum*, 310; *Kramerianum*, 107; *Leopoldianum*, 196; *Lucasianum*, 346; *Marshallianum*, 170; *micropogon*, 365; *oblongatum citrinum*, 309; *saltabundum*, 162; *Sanderianum*, 40; *sphacelatum*, 95; *tetracopis*, 157.

Oncidiums, 106.

Ophrydeæ, 100, 101.

Orchid breeding—cross-fertilisation, 60, 219, 229; in-and-in breeding, 60; self-fertilisation, 60, 219, 229; culture, 63, in *Java*, 36; extraordinary, 261, 262; flowering house, 136, at *Westonbirt*, 327; house, a *Javan*, 37; houses, 157, 168, 213, 257, 321, (at *Westonbirt*), 327, 355; roots, 131, (and fungi), 12, 154; *Society in America*, 94.

Orchidaceæ, 90.

Orchid Review, 8.

Orchid Stud-Book, 375.

Orchids, *Crosses of Albino*, 106; among mosses, 8; at *Bruges*, 197; at *Brussels*, 193, 194; at *Elmwood, Croydon*, 39; at *Gatton Park, Reigate*, 292; at *Ghent*, 161; at the *Ghent Quinquennial Exhibition*, 147; at *Glebelands, South Woodford*, 257; at *Kew*, 87, 219, 318; at *Loochristi*, 163; at *Meirelbeke*, 161; at *Rainhill, Lancashire*, 213; at *Rawdon, Leeds*, 302; at *St. Gilles*, 194; at *The Shrubbery, Oxford*, 4; at *Westonbirt*, 321, 355; at *Weston-super-Mare*, 333; at *Wisley*, 54, 256; back bulbs on, 22; bees fertilising, 37, 200; *Beginner's Collection*, 101; *Brazilian habitats of*, 21; *British*, 54; cultivated for half-a-century, 324; cut flowers of, 68; epiphytic, 131; fictitious, 262; flowering house for, 136;

Orchids—

(at Westonbirt), 327; from Ghent, 62; from Potsdam, 372; from Stanley Park, 318; from Westonbirt, 38, 152, 357; funny, 253; imported, 107; in season, 31, 62, 93, 110, 156, 188, 222, 254, 284, 319, 350, 373; bee which fertilises Javan, 37; leafless, 133; Lesser known, 237; malformed, 221; pendulous, 238; roots of, 291; seedling, 230; specimen plants of, 326; Tale of the Scarlet Butterflies, 262; terrestrial, 131; their structure, development, and fertilisation, 90, 99, 131, 215; with spotted leaves, 285, 286.

Orchis hircina, 246; *latifolia* (× *maculata*), 220; *longibracteata*, 75; *maculata*, 285.

Osmunda fibre, 5, 303, 322, 323.

PALM FIBRE, 38.

Paphiopedilum pollen, 35, 66; stigma of, 36;

Paphiopedilum × *aureum virginale*, 93; *callosum* (normal and disepalous), 49; × *calophyllum* (× *hirsutissimum*), 128; *Curtisii*, 29; × *Doncasterianum*, 94; × *Eucharis*, 228; × *euryandrum* (× *Rothschildianum*), 110; × *Frankeanum*, 29; × *Harrisianum* 87, (abnormal), 87; × *Helena*, 104, 105; × *H. Armstrongiæ*, 104, 105; *insigne* (albinism in), 109; i. *Macfarlanei*, 142; i. *Sanderæ*, 102, 142, 229, (hybrids), 228, (× *bellatulum album*), 103, 106, (× *Maudiae*), 229; i. *Sanderianum*, 142; × *Leeanum* *Clinkaberryanum*, 350; × *Leoneæ*, 228; × *memoria Moensii* (× *Charlesworthii*), 94; × *Minos* (× *insigne*), 94; × *Parkerianum*, 110; *Rothschildianum* (× *Curtisii*), 350; × *Thalia* var. *Mrs. Francis Wellesley*, 273; *tonsum*, 29; × *villosa-Rothschildianum*, var. *Gaiety*, 158; *villosum* (× *Beekmanii*), 94, (× *Buchanianum*), 128.

Paphiopedilums, disepalous, 49.

Phaius, 210: *amboinensis*, 36; × *Clive*, 138.

Phalænopsis, 86; *amabilis Rimestadiana*, 194; *Lindeni*, 11, 205; *violacea* (× *sumatranæ*), 37.

Phalænopsis roots, 133; scarlet, 261, 263.

Photography, self.coloured, 61.

Phragmopedilum × *Sedeni* (abnormal), 350.

Pleione yunnansis, 121.

Pleurothallis astrophora, 238; *hypnicola*, 238; *leptotifolia*, 360.

Pogonia pulchella, 99.

Pollinarium, 132.

Polypodium fibre, 5, 163, 197, 199.

Polystachya flexuosa, 276; *Laurentii*, 363; *liberica*, 155; *Smytheana*, 155.

Porpax, the genus, 7.

Porpax Elwesii, 8; *Jerdoniana*, 8; *Meirax*, 7; *fibuliformis*, 8; *Parishii*, 8; *reticulata*, 8; *ustalata*, 8.

PORTRAITS. — *ADA aurantiaca*, 160. — *AERIDES Vandarum*, Kirk's var., 191. — *ANGRÆCUM sesquipedale*, 32. — *BULBOPHYLLUM Binnendijkii*, 160; *fascinator*, 223; *galbinum*, 320; *mirum*, 191; *orthoglossum*, 223. — *CALANTHE* × *Veitchii*, 64, 128. — *CATASETUM Claesianum*, 320; *Russellianum*, 352. — *CATTLEYA* × *fulvescens*, *Westonbirt* var., 32; *Harrisoniæ alba*, *Stanley's* var., 320; *H. Stanley's* var., 352; *Loddigesii* (monstrous), 376; *Lueddemanniana alba* *Empress*, 128; × *Maroni aurea*, 320; *Mendelii*, *Queen Alexandra*, 223; *M. His Majesty the King*, 223; *M. Holford's* var., 191; × *Princesse Clementine*, 192; × *Rhoda*, 320; × *Rutilant*, 352; *Schrœderæ*, 320; *S. The Baron*, 192; × *Venus*, 352; *Warscewiczii* *Frau Melanie Beyrodt*, 320; × *Whitei magnifica*, 256. — *CELOGYNE perakensis*, 256. — *CORYANTHES Bunge-rothii*, 160; *speciosa*, 128. — *CYMBIDIUM eburneum*, 160; *insigne Sanderi splendens*, 128; × *Lady Colman*, 96; *Sanderi splendens*, 160; × *Winnianum*, 128. — *CYNORCHIS compacta*, 256; *Lowiana*, 128; *CYPRIPEDIUM* × *Actæus Bianca*, 352; *bellatulum*, *Exhim's* var., 192; × *Bianca superbum*, 352; × *Chapmanii*, 96; *Charlesworthii* *Bromilowianum*, 352, 376; *debile*, 128; × *Dom Carlos Rex*, 96; × *Emperor of India*, 352; *Fairrieanum*, 96; *F. Black Prince*, 64; × *gigas*, *Corndean Hall* var., 224; × *Hannibal*, 32; × *Helen II.*, *Westonbirt* var., 160; *insigne*, 64; *Lawrenceanum* *Hyea-num*, 224; × *Minos*, *Young's* var., 96; × *Moonbeam*, 64; × *San-ac-deræ superbum*, 32; × *Sultan*, 64; *ventricosum album*, 224; × *Venus*, 64. — *DENDROBIUM aureum*, 256; *Brymerianum*, *Gatton Park* var., 288; *criniferum*, 128; × *Cybele*, 160; *Madonnæ*, 128; *nobile*, 224; *regium*, 160; *thyrsiflorum*, 128, 224; × *Venus grandiflorum*, 224. — *DIACROCATTLEYA* × *Colmanæ*, 96. — *EPIDENDRUM falcatum*, 376; *Lambeauianum*, 320. — *EPIPACTIS gigantea*, 352. — *ERIA longispica*, 32. — *EULOPHIELLA Peetersiana*, 160. — *LÆLIA anceps*, 96; *Sanderiana*, 160; *waddonensis*, 160. — *LÆLIOCATTLEYA Cappei*, *Charlesworth's* var., 256; *Docteur Delac*, 192; *Elinor*, 128; *Elva*, *Westonbirt* var., 192; *Fascinator*, 64; *Pizarro*, 128; *Queen Alexandra*, 96; *Rosalind*, 376. — *LIPARIS tabularis*, 192. — *MASDEVALLIA towarensis*, 256. — *MAXILLARIA luteo-alba*, 128. — *MILTONIA vexillaria*, 32, 192, (at *Drumlanrig*), 320; v. *Leopold II.*, 160; v. *virginale*, 192; v.

Portraits—

Westonbirt var., 192. — ODONTIODA Charlesworthii, 192, 224; C. Goodson's var., 376; Craveniana, 64; Devossiana, 32; St. Fuscien, 192; Thwaitesiæ, 288; Vulystekeæ, 96. — ODONTOGLOSSUM × amabile Fowlerianum, 256; × Andersonianum, 32; × ardentissimum, Imperatrix Auguste Victoria, 96; × a. Madame Vuylsteke, 224; × Bingelianum, 64, 96; crispum, 64; c. Jean Linden, 96; c. Leonard Perfect, 192, 224; c. Memoria Battle of Waterloo, 64; c. Perfect Gem, 160; × egregium, Madame Jules Hye de Crom, 224; × eximium, 96; × Gladys, 160; grande, 32; × Harryano-crispum, 96; hybridum Bingelianum, 96; × illustre, King of England, 256; × John Clarke, 32; × Lairessei, 192; × Macnabianum, 64; × maculatissimum, 224; × percultum J. R. Roberts, 224; Pescatorei Sanderæ, 352; P. Westonbirt var., 352; × Phœbe, 224; × Queen Alexandra, Crawshayanum, 224, 256; × Rolfeæ, 96; × R. meleagris, 160; × Wiganianum superbum, 288; × Wilckeanum imperiale, 192; × W. Schröderianum, 256. — ODONTONIA Lairesseæ, 192. — ONCIDIUM Gardneri, 192; macranthum, 128. — ORCHIS latifolia × maculata, 320. — PHAIUS × Clive, 160. — POLYSTACHA flexuosa, 352; Lawrenceana, 288. — SOPHRO-CATT-LÆLIA Danæ superba, 352. — SOPHROCATTLEYA Antiochus rubra, 128; Doris, 376; eximia, Fowler's var., 64; warnhamensis, J. M. Black, 288. — SOPHRONITIS grandiflora, 192. — STANHOPEA oculata, 64, 288. — TRICHOPILIA Hennisiana, 288. — VANDA cœrulea Charlesworthii, 376; pumila, 256; Sanderiana, 288; suavis pallida, 160; Watsoni, 96. — ZYGOCOLAX Veitchii, 320. — ZYGOPETALUM xanthinum, 288.

Protoplasm, secret life of, 289.

Pseudobulbs, 132.

Pterostylis, 100, 216; fertilisation of, 216; longifolia, 216; obtusa, 216.

RESTREPIA antennifera, 239.

Rodriguezia crispa, 278; fragrans, 132.

Roots, aerial, 133; chlorophyll-bearing, 133; velamen of, 131.

Rostellum, 99, 132.

Royal Horticultural Society, 10, 42, 71, 114, 138, 170, 202, 242, 274, 306, 338, 362; Orchid Committee, 55.

SACCOLABIUM dasypogon, 342.

Sarcochilus luniferus, 133.

Scaphyglottis alba, 372.

Schlimia trifida, 185, 276.

Scuticaria Steelii, 161.

Science from an easy chair, 261.

Seedlings, 28, 108, 134, 210, 236, 271, 272, 300, 332.

Selenipedium × calurum, 13; × Schröderæ candidulum, 324.

Shading, 86, 212.

Sex, a Mendelian character, 59, 60.

Sexuality, 60.

Sigmatogyne Pantlingii, 342.

Sigmatostalix Eliæ, 372.

Sobralia × Siebertiana, 203.

Sophrocattlælia ×, 82, 83, 352; Danæ, 243; D. aurea, 338; Marathon, 307, 311; Mary 292; Medeia vinicolor, 285; pumeximia, 276.

Sophrocattleya × Antiochus rubra, 74; Doris, 258, 362; eximia, Fowler's var., 13; Saxa, Westonbirt var., 310; warnhamiensis var. J. M. Black, 274.

Sophrolælia × Felicia, 78, 117; Gratrixia (× C. Dowiana), 311; Psyche (× L.-c. Haroldiana), 311.

Sophro-Lælio-Cattleya × Danæ superba, 306; Marathon, 277; Medeia vinicolor, 277.

Sophronitis crosses, 40, (× Epipendrum), 40.

Sophronitis grandiflora, 230, 231; Lowii, 118.

Spathoglottis aurea, Gatton Park var., 241, 242; × aureo-Vieillardii, 241, 242; × Colmanii, 241; Fortunei, 292; × fulvissima, 180; Soutteriana, 180.

Species, 59; Origin of by Natural Selection, 289; What is a species? 59.

Stanhopea tigrina superba, 247.

Stauroopsis solomonensis, 156; Woodfordii, 155.

Stelis omalosantha, 220.

TÆNIOPHYLLUM, 133.

Temple Show, 178.

Thunias, 211.

Tobacco stalks, 197.

Trichopilia nobilis alba, 277.

VANDA × amœna Laucheana, 244; × a. Sanderæ, 275; cœrulea, 198, 322; c. Charlesworthii, 343, 351, 361; c. R. Chollet, 365; pumila, 205; suavis pallida, 120, 152; Watsoni, 354.

Vandææ, 132.
 Vanilla planifolia, 100.
 Variation and inheritance, 289.
 Veitchian Cup, 178.
 Ventilation, 86.

WATERING, 212.

ZYGOPETALUM hybrids, 57.

Zygopetalum Mackayi, 57.

LIST OF ILLUSTRATIONS.

Angræcum hyaloides - - - -	137	Lycaste Skinneri alba - - - -	113
Cattleya Bowringiana - - - -	337	Miltonia Roezlii - - - -	249
Cattleya × Fabia var. Vigeriana -	89	Miltonia vexillaria, Westonbirt var. -	9
Cattleya labiata - - - -	281	Odontioda × Devossiana - - - -	41
Cattleya Lueddemanniana alba - -	201	Odontoglossum × Crawshayanum,	
Chondropetalum × Fletcheri - - -	56	Thompson's var. - - - -	177
Chondrorhyncha Chestertoni - - -	57	Odontoglossum crispum, Queen of the	
Cœlogyne Mooreana - - - -	329	Earth - - - -	232, 233
Cynoches Egertonianum - - - -	296	Odontoglossum crispum var. Leonard	
Cynoches Egertonianum, male and		Perfect - - - -	172
female - - - -	297	Odontoglossum × egregium var.	
Cymbidium × eburneo-Lowianum -	325	Madame Jules Hye de Crom -	209
Cypripedium insigne Sanderianum -	267	Odontoglossum Hallii var. nigrum -	177
Cypripedium × Maudiae - - - -	266	Odontoglossum × maculatissimum -	169
Cypripedium × Rossetti - - - -	265	Paphiopedilum callosum (normal and	
Dendrobium atroviolaceum - - - -	69	disepalous) - - - -	49
Dendrobium Bensonæ - - - -	68	Paphiopedilum × Helena - - - -	104
Dendrobium Brymerianum - - - -	24	Paphiopedilum × Helena var. Arm-	
Dendrobium Harveyanum - - - -	25	strongiæ - - - -	105
Dendrobium Hildebrandii - - - -	26	Paphiopedilum × Thalia var. Mrs.	
Dendrobium linguiforme - - - -	70	Francis Wellesley - - - -	273
Dendrobium nobile - - - -	67	Spathoglottis aurea, Gatton Park var.	241
Dendrobium Phalænopsis - - - -	146	Spathoglottis × aureo-Vieillardii -	241
Dendrobium thyrsiflorum - - - -	23	Spathoglottis × Colmanii - - - -	241
Diacattleya × Colmaniae - - - -	80	Vanda cœrulea Charlesworthii - -	361
Diacrium bicornutum - - - -	81	Vanda Watsoni - - - -	Frontispiece
Habenaria carnea - - - -	305		



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